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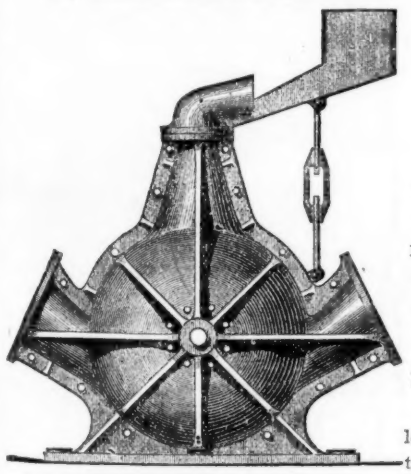

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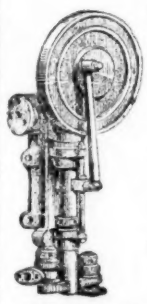

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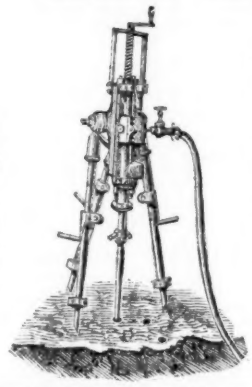

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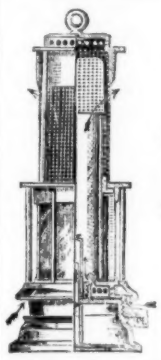

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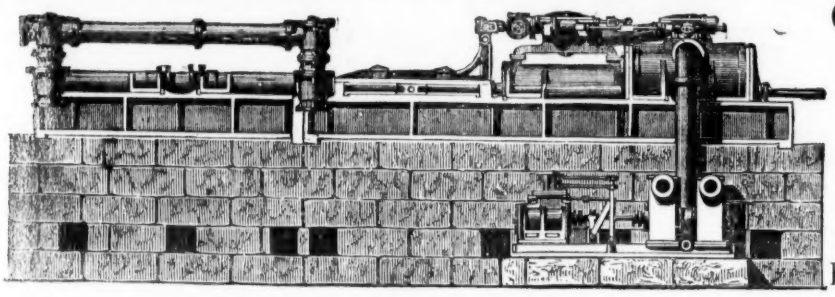

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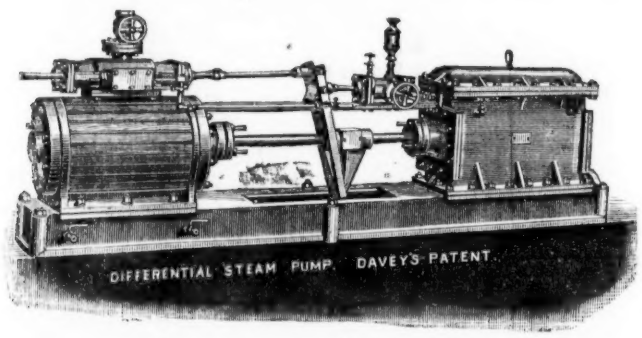

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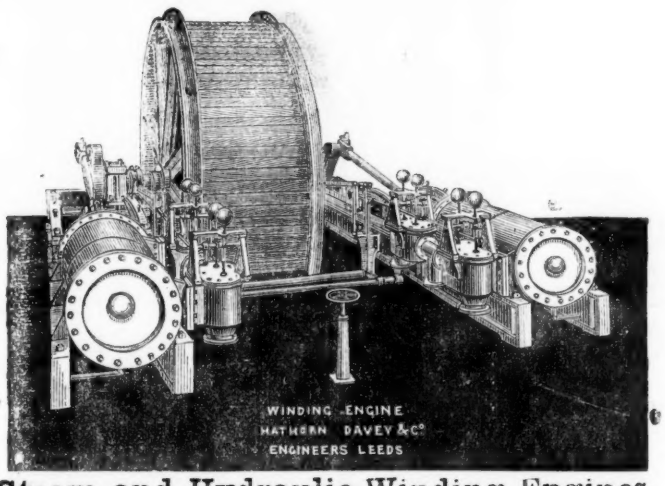

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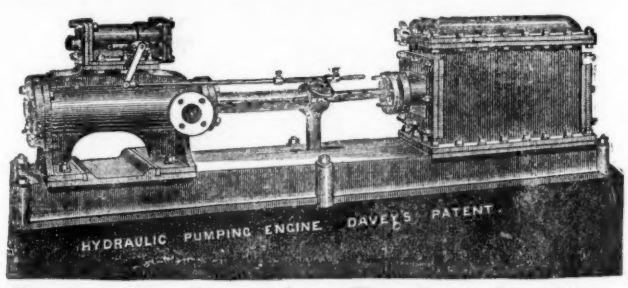

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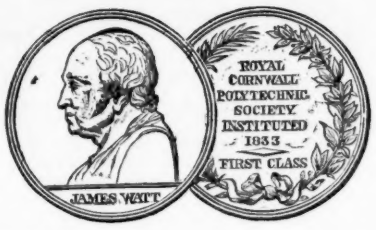

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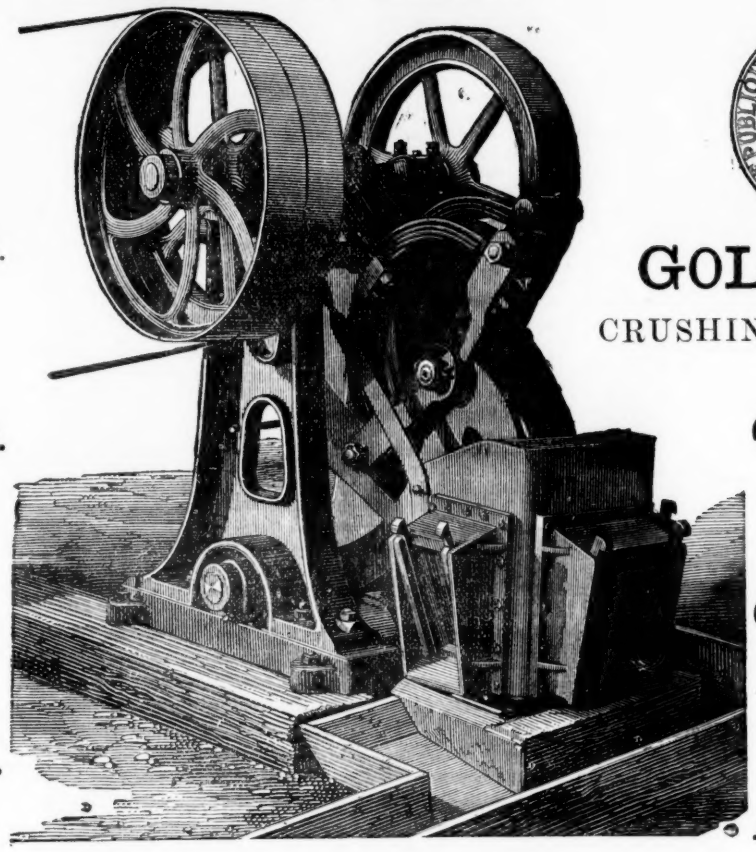

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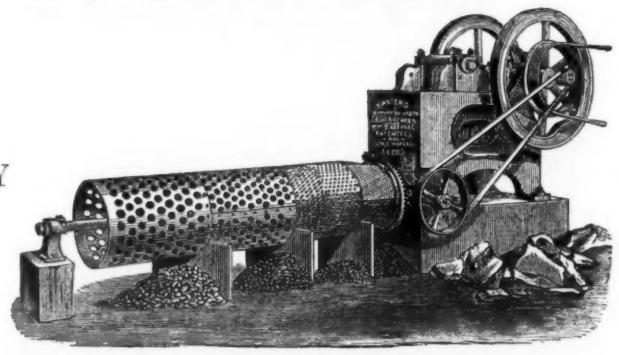

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THE MINING JOURNAL, AND DIAMOND MINING IN SOUTH AFRICA.

SIR,—In the last week's *Mining Journal* some space is devoted to the subject of Diamond Mining in South Africa, evidently with a view to guide and instruct capitalists respecting that industry and its development. I regret to find that in doing so statements are made founded on erroneous figures. Of course I am well aware that journalists are as liable to be misled as other men are, and it is impossible to believe that recognised correspondents of the *Mining Journal* would willingly misrepresent facts and figures connected with any enterprise for the purpose either of damaging an industry or to serve the purpose of speculators. It is clear to my mind that your correspondents have been misinformed regarding the companys mentioned, and this misinformation has led them to wrong conclusions. I have been connected with the diamond mines and the diamond trade for the last eight years, and am, therefore, competent to deal with the subject. I beg, therefore, that you will permit me space to correct the errors into which you have been led. The article to which I refer is as follows:—

> In Diamond Mining Company shares there is still nothing doing, notwithstanding the efforts that are being made to induce the public to buy. The Kimberley Diamond Mining Company held a meeting on Wednesday, but the Press were excluded, perhaps because the profits were less than those of the Kimberley Central, which by the last accounts published amounted to 1 per cent. on the nominal capital for the three months working, and promised to be reduced to *nil* during the succeeding three months. Public companies when they are earning profits do not usually shun publicity; but as has frequently been stated in this column the diamond concerns do not offer capitalists an ordinary prospect of profits. Those who are attempting to manipulate the market have no object but to get rid of the stock; hence the caution exercised to prevent the true financial position and prospects of the several concerns becoming public.

In the first place I may say that in reference to the meeting which took place on the Wednesday named you must have confused the Kimberley Diamond Company with the North Block Company. The latter company did hold a meeting on the day you mentioned, and I am told that by some misadventure the Press was excluded from it, which I regret. I quite agree with your correspondent that *bonâ fide* companies should not shun publicity, but he is wrong in coming to the conclusion that the probability is that the Press was excluded because of a desire to conceal the fact that the profits were less than those of the Kimberley Central. The meeting in question was called for the purpose of altering a clause in the company's Deed of Association and nothing else. The North Block Company is one of recent formation, and has not yet done more than just commenced operations. Your correspondent is wrong in stating that the Kimberley Central has paid only according to its accounts 1 per cent. on its nominal capital for the three months working, and that the likelihood is that its profits will be reduced to *nil* during the current three months. The real fact is that the Kimberley Central paid 5 per cent. for the last three months, and has paid 34½ to 35 per cent. on its capital upon the operations of three successive quarters. This being the case, how can it be stated for the guidance of capitalists in England that "the diamond concerns do not offer capitalists an ordinary prospect of profits?" Can you tell me where better prospects are offered to investors than this?

This company is not singular—very far from it—the British, the Standard, the Compagnie Française, Baxter's Gulley, Barnate, and others could and are paying to shareholders magnificent profits, whilst the finds of newly formed companies show that when they come to declare, the shareholders in them will receive nearly half their capital back in one year, and it is known for a certainty that the diamondiferous soil which increases in richness with depth cannot be worked out for a great number of years to come.

The assertion that efforts have been made to induce the public to buy, and attempts made to manipulate the market, is quite incomprehensible to me. The fact is that the whole or nearly the whole of the share transactions are confined to those who have a personal knowledge of the mines, who understand diamond mining operations, and who know the value of the ground upon which the companies they invest in operate. I write this because I feel that it is due to the industry itself and to the companies mentioned that statements such as those put forward should be set right. W. P. TAYLOR.

Holborn Viaduct, Sept. 20.

MINING IN COLORADO—BUCKSKIN DISTRICT—No. XIV.

SIR,—The continued discoveries in the above district, which is only 2½ miles from Alma and about 14 miles from Leadville, induce me to make a few more to my original remarks on this prolific mineral field. My surveyors have recently made a topographical survey and map of part of it, and I have personally made a close geological examination for several miles up the valley. Some of the mines coming into prominence this summer are recorded as the Buena Vista, Woolsack, Esther, Colorow, Dewajaic, and others. They are all in the Silurian formation, and in the immediate vicinity of the celebrated Old Phillips, well known 18 years ago as the greatest gold producer in the then territory, now State, of Colorado. The lodes have a general north-easterly course, but there are some caunters and cross courses; there are a number of porphyry dykes traversing the ground, which on intersecting the lodes act in a similar way to our elvans in Cornwall. They exert the same influence—viz., the deposition of valuable ores, for where a lode comes into contact or approximating thereto it becomes excessively rich and productive. The stratum is nearly vertical; it may be called schistoze generally, but there are abnormal masses of granite, quartzite, diorite, blue and hornblendic gneiss, mixed with felspar, a little lime and alumina, and talc. Some of the calcite veins are very beautiful in their crystalisations. In all the lodes there is a streak of gossan usually on the hanging wall. This carries the gold; the silver is mostly in the lead and specular iron. There is not much variation in the lithology of this formation; all the rocks are azoic; ferruginous silica predominates in some parts, and felspar and alumina in others. In the mineral bearing parts an oxide of iron is found to be the cementing medium. The mine called the Buena Vista is a good speculation, as the price asked for it is very reasonable. It has a fissure lode about 4 ft. wide running an east and west course. It has been opened on the backs by shode pits and incipient tunnels or adits for 250 fathoms; in all the workings good ore has been found. Now this mine can be worked entirely without any machinery except such as required for crushing and dressing the ore and the necessary buildings; a fine stream of water flows down at the foot of the set. There is an abundance of timber for mining purposes with a saw mill in the vicinity. It adjoins the celebrated Fanny Barrett group of mines, of which so much has recently been talked about in New York and Boston during the past nine months, and which are now the leading stars of the locality. My analysis of the ore and its matrix for one mine is sufficient for many of the others in a general commercial view. Of course some are much richer and others poorer. The following is a sufficient approximation:—

ANALYSIS.

Lime	4	per cent.
Alumina	8	„
Sulphate of iron	15	„
Zinc blende	4	„
Copper pyrites	10	„
Galena	8	„
Ferruginous silica, specular iron, magnatite, and brown oxide	40	„
Manganite, chlorite, talc, felspar, and earthy matter	11	„
	100	

Gold, 1 oz.; silver, 33 ozs.; value, $55 per ton; specific gravity, 2·95; weight per cubic foot, 184·37 lbs. This will give 13¾ tons per lineal fathom while the lode holds 4 ft. wide.

THE ESTHER MINE has a shaft down 20 ft. in a fine course of mineral; the lode is 5 ft. wide. There is more lead in these ores than in several of the others.

THE WOOLSACK.—This mine has a shaft down 50 ft. on a 5 ft. lode. In it are little veinlets of silver that runs 2320 ozs. by assay. The leader of the lode may be taken at 20 in. thick, and is worth $130 per ton in copper, lead, gold, and silver.

THE DEWAJAIC is the adjoining mine. Shaft now down 20 ft. Lode 6 ft. wide in a blue quartz gangue pay streak on footwall 14 inches. When this ore is properly dressed and sampled it runs at $180 per ton. There is very little water in this mine; the miners forked it with buckets for my inspection in four hours; the seepage did not exceed one kibble per hour. The Colorow Mine with other parallel lodes is of goodly size. All have been prospected on. They are all large grants, and there is very little difference in the average value of their ores. The titles to most of these properties are perfect, and patents can be obtained on them at any time. The Ordinance assessment is 20*l.* a year, which must be maintained until the patent is secured, when it ceases. I have been solicited to form an English prospecting company or a syndicate. If I could afford to be in London for a couple of months I would do it, for there is not a more profitable adventure that I know of in Colorado. A society of this kind could secure at a mere nominal cost many of the best remaining mines of the State—the capital need not exceed 5000*l.* The exploring expedition will be about 100*l.* per month, consisting of one engineer, five men, two mules, waggon, camping and mining outfit; this will cost 200*l.* If all is well arranged valuable properties during one year can be located and secured to the amount of 100,000*l.* It is probable a few small purchases may have to be made to clear away any obstructions that may be made by old prospectors, and on the rich lots the patents must be taken out; these cost from 40*l.* to 60*l.* each. Sales can be effected of first-class mines nearly as fast as they can be legally established. In winter time when the snow is deep in Colorado the exploring parties will work down into New Mexico, where there are no hindrances caused by cold weather. There is a large tract of land down there which some of my men tell me is yet unexplored, the surface ores of which are of unusual richness; the locality is kept a secret. All the business of this association may be conducted through my Alma offices, free of any rental charge, and I would not object to act as their secretary for the first year or during the heavy part of the work, when 50 per cent. dividends are regularly available, which is a very easy matter to accomplish. Any person of ordinary technical ability can take the entire local management.

Alma, August. CHARLES S. RICHARDSON, G.M.E.

HOOVER HILL GOLD MINING COMPANY.

SIR,—I notice an advertisement in last week's Journal from H. R. Lewis and Co., relative to the above company, in which it is said that "the weak point may prove the concentrating tables." In common with many others, I have been regularly reading the reports of this company's mining engineer, published in the *Mining Journal*, and I think that the weak point lies entirely in another direction—the insufficiency of the number of stamps—*vide* Mr. Henfry's report of Aug. 23 (*Mining Journal* 10th inst.), in which he says—"It is estimated they (the stamps) will get through 2 tons per head of this hard rock, but I doubt it, and shall be satisfied if we average 25 tons per day throughout." Now, it seems to me that unless the average yield per ton should turn out murh larger than it is at all reasonable to anticipate really satisfactory results cannot be looked for from the crushing of so small a daily quantity of ore. If the directors wish to maintain the market value of the shares would it not be the proper course for them to take immediate steps to increase the number of stamps by 10, or, better still, 20? This will, of course, take time, but it is better to put in hand at once what must eventually be done. The delay in showing any tangible results has already been considerable, though, no doubt, unavoidably so. WATCHMAN.

Sept. 20.

EUREKA (NEVADA) MINING DISTRICT.

SIR,—I have the pleasure to enclose my usual budget of news received from this locality:—

The Silver State learns on reliable authority that thousands of men will find employment on Jay Gould's central road through Nevada the coming winter.

Several gentlemen are in town from various points in the States, to see if they can get a whack at a railroad contract.

Another party of surveyors for the Eureka and Colorado River Railroad started for the front yesterday morning.

The boom in lead is having a beneficial effect on base metal mines and camps. Our furnaces ought now to mark up the price of custom ores.

Moeller and Robbins, the assayers, are kept busy as bees, and are coining money.

Six furnaces are adding their fumes to the atmosphere of Eureka. A good supply of charcoal is coming in, and the bins at all the furnaces are filled to overflowing.

It is stated that the two new boilers recently put in at the Richmond furnaces and refinery do the work of the four formerly used, and give better satisfaction. They have also already effected a saving of about $5000 in fuel.

Three furnaces are smelting night and day at the Richmond, and turning out an immense amount of bullion.

The ore taken from the Eureka Tunnel, 1100 feet from its mouth, on Thursday by a Sentinel reporter, assayed $318 per ton. The assay was made by Messrs. Moeller and Robbins. The vein from which the ore was taken is about 4 in. in depth, and 10 in. wide. Two tons of this rock will be shipped to the furnaces shortly.

A cross-cut is being run to intercept the vein recently struck in the Eureka Tunnel 900 ft. from its mouth. The face of the cut has reached the ore streak, and the work promises to show up something brilliant in the near future.

Captain J. M. Foley, of Secret Canyon, was in town yesterday. He has great faith in the south end mines.

The Sentinel learns that Captain Frank Drake has at last struck ore in the Eberhardt Tunnel, White Pine District. Just how big a body has been encountered is not yet known, though there is no doubt that the development is a most important one. At last accounts the ore had been penetrated several feet, and was still holding out. It is said to be of satisfactory grade. The captain and his company deserve this piece of good luck. They have held on to the enterprise for years under discouraging circumstances.

Dr. Bishop and Jack Kermeen visited the Prospect Mountain Tunnel yesterday afternoon.

The Sentinel was yesterday shown an assay from Prospect Mountain ore giving $1737·50 to the ton. It was from a piece of float the size of a man's head. There ought to be a good mine near by.

Another shipment of Bowman ore will be made next week.

Fifty shares of Jackson Stock were quoted yesterday at 75 c. per share.

The bond on the Dug Out Mine expires in a few days. The mine is looking splendidly.

Jack Gilmer and O. J. Salisbury were in town on Sunday, and departed for Salt Lake yesterday morning. They informed the Sentinel that they would push the Geddes and Bertrand Mill to completion as rapidly as possible.

London, Sept. 14. RUBY HILL.

SIERRA BUTTES (PLUMAS EUREKA) MINE.

SIR,—Your correspondent, "A Firm Holder of Richmond Mining Shares," asks in what investment he could place his money to yield him the 16 per cent. interest which he derives from that investment? I think I can point out to him another mine the prospects of dividend from which are very nearly as good as those of the magnificent Richmond property. I refer to the Sierra Buttes (Plumas Eureka) Mine. The shares, which originally cost 2*l.*, are now at the moderate price of 2⅞, 3, and the dividends paid during the last year have been 3s. per share half-yearly, or at the rate of 10 per cent. per annum on the present market price; but the yield of the mine is now fully 33 per cent. more than at the corresponding period last year, and the outlook for the future is regarded as very promising—so that on a moderate estimate I think investors may depend upon receiving at least 15 per cent. per annum on the present value of the shares, which, however, must be expected to rise rapidly as the resources of the mine are more fully developed. Having recently purchased nearly 200 shares myself as an investment my opinion is not a purely speculative one. EUREKA.

THE CHONTALES COMPANY.

SIR,—I read with great interest the letter of Mr. James Ross, in the Journal of Aug. 27, giving the early history of the Chontales Company, and advising amalgamation with the Javali. He refers especially to the north lodes of the property—the Consuelo, San Benito, and Estrella, where the mining is now going on. By the last two reports the former is yielding above 6 dwts. to the ton, and with fair promise of improvement. There are good grounds for believing that these mines will yet prove a paying concern. Mr. Bell Davies, in his report, makes it clear that the past management was bad, very expensive, and short-sighted. He divided the company's property into two groups—the San Benito and the San Peblo—of ten blocks each, and advised the working of the former only, for which alone the present mill and works are suitably situated. The San Peblo section could not be worked with the present mill or capital. I would ask, then, whether the time has not come when it would not be best, in the interest of the shareholders, to dispose of the San Peblo ten blocks to a separate company. The San Benito section will require all the present company's resources, and if well and truly managed offers a promising future. Mr. Bell Davies advised the driving of the Consuelo adit. This is now being done, and by the June report yields 6 dwts. 6 grs. to the ton. But a large expenditure and some twelve months is required for development. His report concludes thus—"With the more economical method of mining lately introduced the mines will become profitable." Having yielded in past time as high as 1 oz. of gold to the ton, why not again; and if more capital be required for energetic working and improving the machinery of the mill how better obtained than by selling the ten San Peblo blocks unworkable by the present company as it now stands.—*Monmouthshire, Sept.* 18. A SHAREHOLDER.

GOLD MINING ASSOCIATION OF CANADA.

SIR,—In your valuable Journal of Aug. 13 appears a letter signed "Du Loup" referring to the company, in which the writer says he is to a certain extent acquainted with the subject under notice. Will "Du Loup" kindly tell your readers to what extent he is acquainted with the subject? Has he ever been on the ground; or does he know anything about it? As to the fitness of the Hon. Mr. Chapleau for the position of local director, "Du Loup" states that Mr. Chapleau controls a rather turbulent provincial Parliament, and that during the last session he narrowly escaped a vote of want of confidence. Will the gentleman kindly explain in what way these facts affect M. Chapleau's ability, or how they are to have any effect upon the prosperity of this company? To my mind the fact that Mr. Chapleau does control the turbulent provincial Parliament, and did escape the vote of want of confidence, is proof of ability of no mean order, and if I am not mistaken in the identity of the gentleman who writes over the signature of "Du Loup" in preference to his own name he was chiefly remarkable when in Canada for his toadyism to the Hon. Mr. Chapleau. "Du Loup" wants to know why I have not utilised the "abundant water supply" mentioned in the prospectus in washing the gravel in sight. If "Du Loup" was at all acquainted with the subject he would know that the supplies of water in mining countries are not generally found in the exact spot where they are required, and that it is a matter of time and labour to get them there. In the hydraulic mining districts of California years of labour, costing millions of dollars, have been spent making ditches and canals to carry water to the mines. If "Du Loup" will turn again to the prospectus he will find that the estimate for the hydraulic outfit is $50,000. Where did he think this was to be employed if not in bringing the abundant supply of water into the position where it was required? I suppose if a company say they have abundant supplies of wood for fuel on their ground "Du Loup" would expect to find it growing in piles alongside the furnaces, all cut up, and ready for use. When "Du Loup" says that poor Mr. Humphrey doubts whether he will be able to complete his water-course this year; that he has sunk four shafts which have in every instance touched clay on the bed-rock; that some of the men who took employment under him have left him, he is guilty of deliberate misrepresentation in each instance, and I call upon him to furnish an atom of proof of what he states. A. A. HUMPHREY.

MEXICAN ORDINARY STOCK—RAILWAY.

SIR,—It is pleasant to notice that my anticipations about Mexican Ordinary Stock are being rapidly realised. Within the last week the Stock has risen from 87 to 92 for the 100*l.* Stock, no doubt in view of the coming 6 per cent. dividend, and the enormous and steadily increasing traffic returns. Still I should be glad if some clever reader would inform me through your columns why Metropolitan Stock paying 5 per cent. dividend is about 121*l.*, while Mexican Ordinary, about to pay 6 per cent. and probably in future years 8 or 9, is only about 91, 92. OBSERVER.

QUICKSILVER.

SIR,—It is somewhat difficult to obtain the mastery of the meaning of Messrs. Bennett Bro's. letter, inserted in last week's Journal, the more so as the following extract from their communication dated June 28 seemingly supports my statistical demonstrations of the favourable position of this article's stock—it reading "We beg to draw the attention of investors to quicksilver. Its present low price, 6*l.* 5s. per iron bottle of about 75 lbs. net, *compared with about* 25*l. per bottle in the year* 1874 seems to point the article out as of special interest to those who wish to buy and hold for improved prices."

The extract bearing on the year 1874, italicised, is undoubtedly contradictory to the impression of the improbability of a substantial rise evidently desired to be conveyed in their last writing, and a perusal of the letter, June 28, in its entirety mystifies one even more.

As regards to their opinion that yet with an increase in home consumption the whole of the production would not be absorbed, I am totally at variance with them, and in proof of the veracity of my statements submit the undisputed point that the production of 1880 was 115,800 bottles, of which the following were the component parts—

Spanish and Italian	48,200	bottles.
Austrian	12,600	„
Californian	55,000	„
	115,800	bottles.

The Austrian production is, as the following returns show, a matter almost entirely for continental absorption. Importations into London for nine months of each season ending August 31:—

1881.	1880.	1879.	1878.
—	1351	—	280

and in assertion of the correctness of my estimate of an equalisation between output and turnover adduce the subjoined figures:—

	Bottles.
Californian export on 1881 monthly average to August	48,000
Estimated Californian home consumption	10,000
European and Australian consumption, exclusive of England, from Spanish and Italian sources	29,000
Estimated English consumption	13,500
Ditto Austrian Ditto	12,500
Ditto Italian Ditto	500
Ditto Sundry Ditto	2,000
	115,500

The Californian market with a consumption of at least 58,000 bottles, against an outturn this year under that of last 55,000 must presumably be in a sensitive condition, and as a further curtailment is believed to be imminent an upward movement may at any moment be witnessed at that speculative centre, San Francisco. Next treating on the absence of augmented value at the present moment, Messrs. Bennett Bros. have failed to take into account an August that has brought ruin or distress home to our agricultural community, upon whose prosperity the vitality of markets in a great measure depend. At the date I wrote the growing crops promised well and finance afforded every facility, but a depressing change swept over the land during the very month in which, or the next succeding, the realisation of my expectations was anticipated. In this district grain has lain ungarnered in the field two, three, and even four weeks after being mown. Then turning to finance, instead of a plethora of money with difficulties of employment the market has been growing more and more stringent, until the present bank rate is but from day to day dependent on the continued cessation of the drain of gold in discharge of liabilities which must ere long be incurred to supply the national granaries to which a ruined harvest has not afforded its annual quantum. The obligation for cereals is inevitable, but this debt may be balanced by the large purchases now in course by Americans of securities on our stock markets, and a tendency to ease that may be induced at New York by the release of a large sum from the United States Treasury against the balance of 5 per cent. bonds falling due on the 1st proximo. However, should these courses be insufficient to counterbalance the grain import and a bullion export occur, this renewal of the gold drain will not produce now the same stagnation as it has conduced to in the past few weeks, for the autumnal season is one invariably of elasticity and life. Then again, apart from this, a pecuniary incentive has been offered to the managers to stimulate the development of Indian mining. Now if it had been my desire to hold forth specious promises, hardly should I have signed in the same *nom de plume* referring to previous writings, but

under a different signature, quite oblivious of the past, assumed the intangibility of a will-o-wisp. A reference to my letters will clearly show that not once has gratuitous advice been offered, the article's statistical position being merely submitted, and the result on this market should Indian mining prove remunerative alone presented, for the consideration of the directorate of those companies and business men possessing the capacity for an analysis of statistics which, in the opinion of those who have studied the subject, have within them the germs of vitality generally indispensable for increased values. Perhaps it will be as well to point out what is on reference a palpable error of Messrs. Bennett Bros.—the quoting of the dating of my letters as that of the Journal's issue instead of three to four days previous. This explains any discrepancy as to market's buoyancy between your, Mr. Editor's, and my tone. In conclusion, I still maintain that events ere the year closes will have borne me out, and adopting a celebrated political *bon-mot*, would remind Messrs. Bennett Bros. that "an investor with a future can wait." INVESTIGATOR.

Roydon, Sept. 20.

QUICKSILVER.

SIR,—In last week's Journal "Investigator" remarks—"I would call attention to the bearing of the following figures as constituting an anomaly seemingly incapable of explanation, the high prices of 1875 not being exceptional:—

	Californian production. Bottles.	Californian export. Bottles.	Highest price.	Lowest price.
1875 ...	53,000 ...	28,960 ...	£24 0 0 ...	£9 17 6
1880 ...	55,000 ...	44,719 ...	7 15 0 ...	6 7 6
	Increase production.	Increase export.	Fall in highest price.	Fall in lowest price.
1880 over 1875 ...	2,000 ...	15,759 ...	16 5 0 ...	3 10 0."

"Investigator" has only taken into account the export by sea in 1875 (28,960), but in 1880 he includes about 10,000 bottles overland. The few thousand bottles difference was principally caused by the United States of America bullion mines taking less in 1880 than 1875. In 1879 the quantity of quicksilver sent overland was about 10,665 bottles. We copy the following statistics, given as exports from California by sea only, and not including overland—

1871 .....Bottles	15,205	1876 .....Bottles	41,140
1872	13,089	1877	46,280
1873	6,359	1878	34,280
1874	6,770	1879	52,180
1875	28,960	1880	34,587

The quantity overland in 1873 is given as 10,434 flasks, and in 1880 as 11,862.—*Great Tower-street, Sept.* 21. JOSEPH BENNETT BROS.

LEAD REPORT.

SIR,—Since our last the lead market has been very active, and considerable sales have been effected. Early this month some soft Northumberland lead was sold at 14*l.* 15s. for delivery from October to June, and at this price considerable sales were effected. Spanish lead is in good demand when it contains silver, and the prices are firmer and advancing, and very large lots have changed hands. The last reputed price was 15*l.* 2s. 6d. to 15*l.* 5s. Manufacturers also are well supplied with orders for their goods, but they are not able to obtain the advance made in the pig-lead. STOCKS.

Newcastle-on-Tyne, Sept. 22.

GELLIVARA IRON ORE EXPLOITATION.

SIR,—*En resume* of my last week's correspondence on this subject in this epoch, when the most magnificent manifestations of nature's God reach us from the Far West, the most recent, as minutely set forth in the works of George B. Prescott on the telephone and electric light, and by W. E. Sawyer on electric lighting, I may in justification of what I have previously adduced in favour of my system of gravitation transit refer to W. M. Gillespie's admirable treatise on the principles and practice of road making, railroads, &c., indigenous to the same zone. He says the principle of compensation on descents was carried to such an excess some years ago that it was sanguinely recommended to make all railroads undulating, carefully avoiding all levels, and establishing a continual succession of descents and ascents. It was urged that the momentum acquired in descending one slope would carry the cars up the next, just as a pendulum swings as far to the one side as to the other, and that having received an impelling force at one end of the road they would reach the terminus down one of these slopes and up the next in turn, by the assistance of gravity alone. The most fatal objection, however, to that theory is that the velocity—high velocity—absolutely necessary to my system, but impracticable with existing surface railways (*vide* Nicholas Wood on Railway Exploitation), which a train must have acquired when it had reached the foot of one slope to be sufficient to carry it up the next would be too great for safety. Such can, however, be overcome by a single rail trajectory, at a suitable altitude from the ground, passing through the middle of the cars, hanging from it on each side, like two saddle-bags on a horse. The advantage of thus lowering the centre of gravity is considerable. The cars can never, under any circumstances nor with the greatest possible velocity, leave the track, and the expense of construction and working is immensely reduced. It is well known the vast profits accruing to promoters from the purchase of locomotives and railway material inseperable from the surface George Stephenson system, which would be lost by the non-such requirements of the undulating system; and, therefore, there is no wonder that the existing system found universal favour. The late Nicholas Wood states—"Gravity being a motive power so very economical it is of the utmost importance that its aid be extended to every situation, and in every case where its application is available. Simplicity prevails in all the wants and operations of Nature, and none more simple, and at the same time more effectual, than gravitation. Let those who for interested motives, or through the predominant superficialism of the age, place themselves beyond the region of calculation, investigation, and practical sound logic, ask a follower of Bacon what the new philosophy, as it was called in the time of Charles II.—in other words, scientific discovery—has effected for manhood? His answer is ready. It has lengthened life, mitigated pain, extinguished many diseases, increased the fertility of the soil, given new securities to the mariner, furnished new arms to the warrior, spanned great rivers and estuaries with hedges of form unknown to our fathers, guided the thunderbolt innocuously from heaven to earth, lighted up the night with the splendour of the day, has extended the range of the human vision, multiplied the power of human muscles, accelerated motion, annihilated distance, facilitated intercourse, correspondence, all friendly offices, all dispatch of business, enabled men to descend to the depths of the sea, to soar into the air, to penetrate securely into the noxious recesses of the earth, to traverse the land in cars wheeling along without horses, and the ocean in ships running 10 knots and upwards against the wind. These are but a part of the fruits of the first fruits of a philosophy which never rests, which is never perfect—its law being progress. A point which yesterday was invisible is the goal to-day, and to-morrow its starting point. Such are some of the results accomplished by the new philosophy—in other words, scientific discovery, possessing no finality. If such results in the past what discoveries may not be in store for us." The aforesaid from Lord Macaulay's famous essay on Lord Bacon.

The marvellous progress of the last two generations should make every one cautious of predicting the future. Greater works than any yet achieved remain to be accomplished. As to the future we know we can, and no doubt shall, greatly improve the application of those forces with which we are acquainted. Our present knowledge compared to what is unknown in physics is infinitessimal. Nature is an universal want to be filled with God, and to the thinking man the discoveries of the day are of a much higher scientific nature than hitherto. The system I propose of a gravitation railway is no novelty, although its introduction in this country is doomed to meet with the most strenuous opposition of the investors of 800,000,000*l.* in the surface railways of the United Kingdom; but that it will supplant the existing system there can be no doubt. Its inauguration must take place in a country where it does not clash with vested interests, and when once a success there will be no lack of capital to adopt it in this country. At all events, with the concession of free land and free wood for transport material we arrive at a cost of construction in Swedish Lapland infinitessimal as compared with existing railways. Wooden railroads have long existed in North America, with not a particle of iron being used in the whole construction, although iron ore is a leading element of transport. A redevance or royalty will be paid by a proposed limited company for working the iron ore, as well as an equitable price per tree felled on their property. Taking into account the continued low cost of rail and sea transport to Western Europe an extremely remunerative traffic can be carried on at selling prices intrinsically much under Spanish.

Little Tower-street, Sept. 20. W. J. THOMPSON.

THE BILBAO IRON ORE COMPANY.

SIR,—Surely the shares of this company may be classed amongst those neglected securities to which the attention of the readers of your valuable Journal may with advantage be drawn. This company earned last year nearly 12 per cent. on its total paid-up capital, and its shares are to-day at about 50 per cent. discount. When the position of this company is carefully examined it is still more difficult to understand why its shares remain at such a price. It is now more a railway or carrying company than an ordinary mining company. A large part of its income is derived from the carriage of ores from other mines, and this part of the company's business is steadily increasing. Three large Scotch iron firms have been for some time engaged in opening out new mines in connection with the Bilbao Company's railway and pier, and they have just commenced to deliver ore. This growing feature in the company's business renders the shares of the company much more desirable for investment than ordinary mining shares. The principal reasons for the low price of the shares appear to me to be as follow:—1. The true position of this company is not at all well known, especially on the London Stock Exchange.—2. There was much disappointment at the small proportion of the profits which was distributed in April last. But however disappointing the 2 per cent. dividend may have been to some of the shareholders there is no doubt but the permanent holder will eventually reap the advantage of this cautious policy on the part of the board. The company is now in an excellent position. Ten per cent. debentures were paid off, partly out of profits, and partly by the issue of new 5 per cent. bonds. Preliminary expenses were written off, stores revalued, and extensive improvements made on the property at the expense of the revenue. With the balance of the proceeds of the new 5 per cent. bonds heavy royalties that have been hitherto payable by the company were bought up on favourable terms.—3. The low prices current in the iron trade during the summer months have no doubt frightened holders and also those who would have otherwise bought the shares. When the accounts are issued I think it will be found this company has suffered very much less from the low prices than might have been expected. The output remaining good the returns from carriage remain the same; and as to prices, we are now entering on better times. Bilbao ore is now 25 per cent. higher in prices than it was a few weeks ago, and there is every appearance of still better prices being readily obtained.—4. The market for the shares has been hitherto almost entirely confined to Sheffield, and this market is too limited. The shares, however, have been recently taken up more freely in London, and this, together with the division of the capital into 10*l.* instead of 50*l.* shares, ought to lead to more business, and better prices for the shares on the London Stock Exchange. To conclude, I believe the prospects of the company have only to be more generally known to cause a considerable rise in the price of the shares. The price now ought certainly to be over 7*l.* per share instead of a little over 5*l.*, and I believe the price will be still higher before the next annual meeting in March. The 10*l.* shares of the Marbella Iron Ore Company are now freely dealt in, in Glasgow, at about 7¼, and the results got by this company have not been equal to the results got by the Bilbao Company. BILBAO.

London, Sept. 22.

GOLD IN WALES—No. XXXIII.

SIR,—Work at the old Glasdirissa auriferous copper mine is nearly ready to be resumed, after standing idle for seven or eight years. This may be called a Parys Mountain Mine on a small scale. Nearly 10,000*l.* worth of copper ore has been sold therefrom, and free gold found therein; but, as far as I know, no buyer was found to allow the seller a farthing for the contained gold and silver. The hill is some 800 ft. above the sea level, and appears to be thoroughly saturated with copper and iron sulphides, the whole of which I believe to be more or less auriferous. The chief body of the ore is arrived at by a wide adit 150 fms. in length, at the end of which the ore is being wrought 7 fms. in width, and can be trammed to the mill at 2s. 9d. the ton. The mine is situate in the most beautiful part of the Mawddach Valley, four or five miles north of Dolgelly.

The reduction works, by far the completest in the county, are erected on a slope of the mountain; the water from two united streams flowing from a lake at half a mile distance is made to turn three capital water-wheels in succession, and a turbine at the foot of all. At present about 100 tons of the ore can be dressed per week, which is probably a fourth part of what may be easily and cheaply raised. The lessor of the property is E. Vaughan, Esq., of Nannau, and being private land, in which the mineral rights are not vested in the Crown, the mine is being wrought under the Acts 5 William and Mary, cap vi., and 55 George III., cap. cxxxiv.

London, Sept. 22. T. A. READWIN, F.G.S.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

SIR,—In reply to the letters signed R. N. Worth and that signed "One of the Judges," published in last week's Journal, we would observe as follows:—

That it is not calculated to inspire confidence to find only two exhibitors of mining machinery at the Royal Cornwall Polytechnic Society's Exhibition, and that the judges of mechanics gave a medal for wigs, while ignoring machinery which won a medal from the Mining Institute of Cornwall, at Truro; the gold medal at Melbourne Exhibition, and which answers well in Jersey, Anglesey, and Australia (where simplicity and efficiency are so important), and which machinery is also made by local makers in Australia, as well as imported, though liable to 27½ per cent. import duty, and heavy expenses for freight, &c.

We, of course, do not complain of machinery being tried at the Graving Dock, instead of at the Polytechnic Hall, as steam is only available at the former place; but we think the catalogues and notices ought to have specified where the machinery in operation could be seen, for as it was it was only seen by the judges and a few dock employees.

We agree that the cost exhibitors have incurred ought not to influence the judges in awarding prizes; but we contend that it entitles the exhibitor to have his exhibits brought prominently before the exhibition visitors, and we say the machinery in operation at Falmouth Exhibition might as well have been at the North Pole, so far as bringing it before the public was concerned.

The judges of mechanics also came unexpectedly the day before the Exhibition opened. Our compressor and rock borer were put to work on a small block of granite, which was perforated 9 in. deep in 2½ minutes; but explanations could not be given, as the judges were not expected before the Exhibition opened. As to the only other exhibit, the leather belt driving Baxter's stone-breaker was so saturated with rain that he threw it off the machine, as he could not get it to work properly. The judges said they would come again next day, but did not, neither did anyone else, as it had not been made known that the machinery in operation could be seen at the Graving Dock, a mile distant from the Exhibition; hence both Mr. Baxter and ourselves, with reason we think, agreed in regretting the expense and trouble we had incurred. Mr. Baxter received a medal, much to his surprise, for he said he did not expect anything, considering the rain had prevented his working his machine properly before the judges.

After what has occurred, as explained above and in our letter published in the Journal of the 10th instant, we naturally think our exhibits were judged without due consideration, and put where no one could see them; also, that possibly we, as well as the scholars, have reason to complain of partiality, due perhaps to some interest in other machines in use double the price of those exhibited by us, which we contend are as efficient and less expensive to keep in order.

As some of the above letters hint that, like many investors, we over-estimate the value of our exhibits we may mention that they are not our invention; but that having satisfied ourselves as engineers that the invention was worth taking up we have devoted much time and expense in perfecting them and making them practically useful, as fully explained in the description in the Journal of May 24, 1879.

London, Sept. 21. A. NORMANDY STILWELL AND CO.

COST-BOOK MINES.

SIR,—I have read with much interest the various articles and letters which have within the past few months appeared in the *Mining Journal* upon the Cost-book principle, and as it is clear from a letter which appeared in last week's Journal signed "J. A. H.," headed "The Cost-book and Limited Liability," the Cost-book principle is even now not clearly understood, I may be excused for troubling you with this letter. Shorn of all surroundings the Cost-book is in principle a pure and simple partnership, to a great extent modified and controlled by custom and by an Act of Parliament, the latter in some respects not altogether beneficial to the members. I agree that the Cost-book principle is the most simple, as it is the most primitive, method of working mines. I admit that it is quite impossible to calculate with any certainty how much will be required to bring a mine into a condition to meet the cost, and where a number of persons known to each other agree to work a mine, personally attend the meetings, and make themselves thoroughly conversant with the business of the mine, it is comparatively safe, at least the risk is not much greater than in an ordinary partnership where a sleeping partner in a business leaves the active management to others. The fact that those who are entrusted with the management are personally known to and have to meet and come in contact with their co-partners, imposes a sort of moral responsibility to faithfully discharge their trust, and communicate freely and fully all matters which tend to affect the interests of those joined in the venture. Under such circumstances a man feels under a special obligation, such as no one can feel towards a stranger. There is all the difference between simply doing his duty and freely and confidentially communicating with those with whom he comes in contact and talks to freely and familiarly as friends. Mining is a business so purely speculative that the most natural way to conduct it is to pay as you go, and treat the money as sunk in the adventure, and when a prize turns up to treat it, not as so much interest upon an accumulation of dead capital, but as a fortunate "hit," the same as if you had paid your half-crown, and the wheel of fortune had turned up a prize.

There is another side to the question which deserves very serious consideration, and I fear much that has appeared in the Journal, contributed by a real lover of the Cost-book principle, a gentleman for whom I entertain very great respect, may have a tendency to mislead those who are not acquainted with the practical working of the principle, and to land them in risks which they never contemplated. It must be borne in mind that the Cost-book principle is an unlimited partnership, that is every member is liable for the whole debts of the concern to his last shilling, but then it is urged that every member is made acquainted at the periodical meetings with the real state of affairs. He knows approximately what amount is being spent; he knows how many shares that amount has to be spread over, by whom those shares are held, and if he does not know he can by making enquiries find out whether or not the holders of the shares are able to meet their proportion of the working costs, and can, therefore, calculate pretty accurately what amount he will have to pay as his proportion. Very good in theory no doubt, and where all the parties live in the neighbourhood of the mine or within a short distance of the offices where the company's business is transacted, so that they can call and see the purser or manager and look after their own interest. But let us take the case of a mine in Cornwall—the offices are in Truro, Plymouth, London, or anywhere else—the shareholders live in various places, miles, possibly hundreds of miles away, and consequently seldom or never attend the meetings, are not personally acquainted with, nay are wholly unknown, to the manager except by name. Suppose the bulk of the shares are held by some half-dozen individuals, the usual meeting is held, the prospects are anything but cheering, a call is made, and apparently things go on as usual for another two months, or whatever the interval may be. In the meantime heavy liabilities are being incurred, and things go on in the same way for several months, until at last a crisis comes, and the outside members find to their dismay that the shares which they imagined were held by persons able to meet the calls had been quietly transferred to parties who, although apparently respectable, were wholly unable to pay, and instead of having to pay what they calculated would be their proportion of the cost, they are called upon for an amount which is a more or less serious loss, and in many cases utter ruin to them. In one case a friend of mine, as well acquainted with Cost-book mines as myself, was called upon to pay 1100*l.*, when he was under the delusion that he was not liable for so many shillings. I could name several cases within my own knowledge where one-fourth, one-third, and even as much as one-half the shares in a Cost-book mine were held by one individual, who by withdrawing or transfering his shares to someone unable to meet heavy claims could throw a corresponding burden upon his fellow shareholders. It may be argued that in the case you mention the purser or manager would at once call a meeting or inform the other shareholders, but it must be remembered the manager has every inducement to keep silence. He does, no doubt, give his immediate friends the "tip," as it is called, and they take care to protect themselves by slipping out as quickly as possible, but how about the outside shareholders, those who live hundreds of miles away, and are only known to the manager by name, or who living in the neighbourhood of the offices do not happen to be among the favoured few to whom a "tip" is given. The manager is only human; a disaster would affect him in many ways, possibly cut off the supply to his cupboard, so he postpones the evil day, and comforts himself with the hope that something will turn up, some "flat" may be caught to take the shares of those who have slipped out, or some "discovery" may be made which will put things right again. The fact is, and it is cruel to conceal it, the Cost-book principle involves risks far more serious than an ordinary partnership; in an ordinary partnership no one partner can slip out and leave the burden of the whole concern upon the others without their having ample notice, and being thus able to protect themselves; but in the Cost-book partnership the only substantial man may at any moment slip out, and their partners may not be acquainted with the fact for months, in the meantime living in a fool's paradise, while an amount of liability is being heaped upon them that will crush them. The result of upwards of 30 years' practical acquaintance with the working of the Cost-book principle is that I most earnestly warn my friends never to take a share in a mine worked upon the Cost-book principle. Under the most favourable circumstances, where the shares are held by persons of undoubted financial position, and the manager is a man of the highest character, there is, and must be, a feeling that the liability is unlimited, that something may arise which could not be foreseen, and which may possibly land you in difficulties. After all that has been urged in favour of the Cost-book principle as specially applicable to working mines, I do not see where in the superiority over Limited companies consists. Let us consider it a little.

A Limited Liability company is started. It is calculated that 10,000*l.* will be required to open up the mine, and bring it into a position to pay its way; the capital of the company is fixed at 10,000*l.*, in 10,000 or any other number of shares. Each member takes what number he thinks he can afford to pay upon, calls are made as the money is wanted, and if the capital is not sufficient to develope the property more capital is subscribed, or a new company is formed to take over the property, and carry on the work, and the old shareholders can go in for another venture or not, as they please, the actual loss being the cost of getting the further capital subscribed, whether done by making a new company or otherwise, what practical difference is there? There has been a dead loss of a certain amount of capital, and a fresh start has to be made, while the advantages to be gained in the limited company is that the investor knows the extent of his liability, and that come what may he cannot be called upon to

pay more than the nominal amount of the shares he has taken. Then it is urged, as an advantage in favour of the Cost-book, to make a transfer you have only to sign a notice to the purser upon a six-penny stamp whatever number of shares you hold. I fail to see that it is any more trouble to fill up and sign an ordinary transfer, and send it to the secretary of a company than a notice, and I think the comfort of feeling that in taking shares you are not incurring an unknown liability much more more than compensates for the additional stamp duty payable.

Then it is urged that you can at any time, by giving notice, put an end to your risk. I think it will be seen that whether that is an advantage or a disadvantage depends upon the side from which you look at it, whether from the side of the retiring or the continuing members. Then we are told large sums are not paid to vendors for the property—an assertion more easily made than proved. However that may be, that such a system exists is the fault of those who uphold it. When a vendor proposes to charge any number of thousands of pounds for a property which is not worth as many shillings, and directors can be found either through ignorance or from other reasons to lend their names to mislead the public, and the public without enquiry invest their money, they have only themselves to blame, the principle is good. It is, I maintain, as applicable to the working of a mine as to any other enterprise, and if shareholders would only look after their own interests and exercise that care in investing their money in public companies which they do when they invest it in the purchase of a house, a horse, or a cow, the occupation of the unprincipled adventurers, who obtain a tack-note for a couple of guineas and sell it for thousands of pounds, would be gone; and if an example were more frequently made of some of the men who lend their names as directors to ensnare investors, in order to pocket their fees or share in the plunder, they would be more careful how they did so. I am surprised we do not see more actions against directors who allow prospectuses to be circulated with their names upon them which are full of the most deliberate falsehoods. Many of them are worthless adventurers, but some of them are responsible men.

But is it not a fact that those who bring out mines upon the Cost-book principle do not get more or less plunder out of the members in a direct or indirect way? I happen to know they do. I will mention two ways. The vendor, who is usually the promoter, transfers the property to the adventurers for a certain number of shares, paid up to so much, and, as a rule, slips out of the shares as quickly as possible. What is that but promotion money, or, to give it the slang name in use amongst the gentry, "plunder?" Another way. The promoter and his friends take the shares, and in that case it is a clique, who together are really the vendors or promoters, by circulating flaming reports, making grand discoveries, and little artifices and dodges, common to promoters of companies, both Cost-book and Limited, they run the shares to a premium, and thus secure their "plunder." How many of the Cost-book companies come to grief? I have not had sufficient curiosity to go minutely into the matter, but I have no doubt, on the whole, taking mining enterprise generally, for honest and successful management the Limited principle will bear favourable comparison with the Cost-book, and people who will venture their money in mining enterprise can, when the amount of their liability is limited, sleep undisturbed by unpleasant dreams, although they are not amongst the favoured few who, if anything goes wrong, get a "tip" from those behind the scenes. The fact is, the Cost-book principle is beautiful in theory, was admirably adapted to those primitive times (which gave it birth) before steam was thought of, and when a journey to Cornwall was as formidable an undertaking as a journey across the Rocky Mountains in our own times, when mining enterprise was conducted upon a very limited scale, and confined almost wholly to people living in the district, but it is wholly unsuited to the times in which we live.

Sept. 21. ——— ALEX. KERLY.

MODEL MINE MANAGEMENT IN GUNNISLAKE DISTRICT.

SIR,—The committee, or what may be termed a "merchant supply committee" of management of a well-known mine in this neighbourhood, are exhibiting their skill in the art of managing the company's property. As this mine is being worked at present there are only 8 out of 16 ends driving, with four men in each; this number of men are opening out about 10,000*l.* worth of ore annually—more than can possibly be sent to surface through the one shaft, and be prepared for market with the present insufficient supply of water. For the want of water for condensing and dressing the drawing engine works two shifts only out of three, and the dressing machinery one. By continuing to work the mine with these disadvantages, together with the present low price of ore, the committee could see no other prospect before them than continual profits for the shareholders of about 1500*l.*, or dividends of 3s. per share every four months. The committee, full of sympathy and with brotherly love beaming on their seraphic countenances, assembled to consider the best and most profitable means (to themselves) to be adopted for relieving their fellow shareholders from the inconvenient burden of such large dividends. For this purpose the committe deliberated eight hours, during which time many very thoughtful and to them practical propositions and suggestions were made. One of the members spoke of taking in a large stock of all kinds of materials before the prices were lowered, and pay for them at once, but an agreement could not be arrived at, as some wanted to supply more than others considered a fair quantity. Another said, "Let us buy a Robey engine for the purpose of burning more coal," but some one whispered, "Committee do not supply coal." Then it was proposed to clear and sink an old shaft west of present operations, but after some little consideration it was believed by all hands that as the shaft was nearly dry and perfectly sound, there would not be required any extra engine, pumps, timber, nails, iron, tallow, baize, books, printing, or anything else supplied by the committee, or on which any of the officers could get a commission. It was suggested by another member that four new jiggers be purchased and placed by the side of those two already laid aside for the inspection of visitors, but that these four new ones be made for different grade ore; and it was intimated that two men should be educated and placed on the spot by day to explain to all visitors the uses of the different parts of the machines in a fluent, grammatical, and gentlemanly style, but some members considered the two already there to be sufficient for the public to learn from, and that the captain dresser has plenty of time to give all comers a full explanation of how they would work if fixed in a place for that purpose.

These propositions and suggestions, with several others afterwards advanced by different members of the committee, although very highly spoken of, for want of sufficient support fell through, and the committee became disheartened and discouraged. At this point of the deliberations the manager, with his mind firmly fixed (on commission), and with his keen eye seeing their plight and his chance, rose to his feet with that bashfulness natural to him, taking great care, as usual, to put his words in such a form as to avoid using the big I, said—"Gentlemen, excuse my freedom in speaking, but my simple opinion is that you could not do better than purchase two boring machines of small size, just suited for boring in china-clay; let one of them lie on the surface by the side of the two idle jiggers for public inspection, and put the other to work in a poor end in or near the bottom of the mine, so that six men can burn dynamite enough to smother all the rest of the men in the mine. The drawing engine then would be engaged half its time in drawing useless debris instead of ore; therefore, we should only be able to sell 200 tons of ore instead of 400 tons every four months as now, which would permanently lessen future returns, increase the cost, and use up the present balance and future profits, if any, in purchase and erection." The committee, in tears of joy and almost breathless, hailed the statement with delight and acclamation, and one of them learnedly exclaimed, "of a truth our manager has all the enthusiasm and profusion of Homer, and like Horace comprehends a great deal of matter in a few words—he paints everything with force and simplicity, his judgment is profound, his thoughts and Nature elevated and noble." The Chairman, who had just received a large order from him for another mine, thereupon advised that the manager's salary be raised from eight to ten guineas for the one day a month he visits the mine to enquire of the resident agent how things are going on. It was decided to order the two boring machines at once, so that they might, if possible, be paid for before the next meeting. I hear now that they are on the mine, and that one of them will be erected early in the spring of 1882. The committee for their admirable management will at the next general meeting solicit from the shareholders a vote of thanks, and a remuneration of 100*l.* a year each.

Tavistock, Sept. 20. ——— JAMES TOZER.

OKEL TOR MINE—ARSENIC.

SIR,—Your correspondent who in last week's Journal wrote so enthusiastically in the matter of the Okel Tor Mine has very innocently mistaken arsenical ore for pure arsenic. The various levels at Okel Tor may, as the manager says, average 18 tons of arsenical ore per fathom, and yet not produce 5 per cent. of that quantity of pure arsenic. ——— ASSAY.

ARSENIC—OKEL TOR AS AN ARSENIC PRODUCING MINE.

SIR,—"Investigator" in last week's Journal makes some extraordinary statements, but is evidently not well acquainted with his subject, when he values 18 tons of arsenical ore per fathom at 175*l.* 10s. If he were to ascertain how many tons of arsenical ore it takes at Okel Tor Mine to produce 1 ton of refined arsenic he would arrive at a widely different figure. He should also bear in mind that, with the exception of Devon Consols and Okel Tor, the various mines he mentions sold their arsenic in 1880 in the crude state.

Callington, Sept. 20. ——— CONSTANT READER.

ARSENICAL MUNDIC MINES,

SIR,—The letter in last week's Journal from "Investigator" respecting mines having arsenical mundic lodes is important to investors in mining shares. I had the hint given me some months ago by a mining expert, and I have since personally visited most of the arsenic mines your correspondent mentions. I was at Friendship, Okel Tor, Devon Consols, and Holmbush; also two important neighbouring mines "Investigator" does not refer to—Gawton and Lady Bertha. At Gawton, when I was there, they had nearly completed their arsenic works, and at Lady Bertha they had just acquired the Old Tavy Consols Mine adjoining, with its arsenic works.

I agree with your correspondent as to the probable future value of Okel Tor Mine, situated as it is like Gawton Mine (opposite) on the banks of the navigable River Tamar; but the mundic they were both raising contained a low percentage arsenic as compared with the Lady Bertha mundic, which latter, indeed, contained the highest percentage of arsenic of any mine I saw. The next best mundic I found at Holmbush.

There is no doubt all these arsenic mines, which appear to me to be carefully managed, have a fine future before them for shareholders, as arsenic is used for so many manufacturing purposes now that supply does but keep pace with the demand.

London, Sept. 22. ——— A LONDON INVESTOR.

ARSENIC—DEVON FRIENDSHIP.

SIR,—Your correspondent, "Investigator," in last week's Journal, in comparing the prices obtained for arsenic, makes a slight omission with reference to this mine, which you will perhaps permit me to correct. The prices he quoted, 9*l.* 5s. for Okel Tor, and 8*l.* 6s. for Devon Consols are for refined arsenic, while the Devon Friendship rate, 5*l.* 16s., is for crude arsenic, the price for which is from 60s. to 70s. per ton less than the refined. In addition to this, the terms of sale of the Devon Friendship arsenic required the return of the casks to the railway station (within half a mile of the mine), which was equal to a further 10s. per ton, so that, to make a fair comparison, about 4*l.* should be added to the 5*l.* 16s. I may add that we are now preparing refining works to treat the increased quantities of stuff which will be raised immediately after the completion of the large water-wheel now in course of erection, and which is expected to be finished in about a fortnight from this date.

Sept. 20. J. H. A. SMITH, Secretary.

WHEAL JANE.

SIR,—It is very gratifying to find the reports of Captain Charles Craze, of South Frances Mine, and Captain T. Hodge, of Wheal Grenville, so good. It would appear that two tons per month more of tin will pay costs, that there is every prospect of their returns increasing considerably, that it is considered to be a sound property, and that there is every prospect of its being shortly brought into a profitable state again. The total outlay per share to date is only 1*l.* 10s., and the total dividends per share 1*l.* 7s. 6d. The machinery, &c., is worth 16,000*l.* to the mine, and yet these shares can be bought at 12s. 6d. per share. Absurd!—*Threadneedle-street, Sept.* 22.

——— H. GOULD SHARP.

WHEAL JANE.

SIR,—In consequence of the unscrupulous and persistent attempts which have been made to damage this property in the eyes of the shareholders and public since the resignation of the late manager, Capt. Richard Southey, the committee have thought it desirable to have the mine inspected and reported on by two acknowledged mining authorities of ability and repute—Capt. Charles Craze, manager of South Frances, and Capt. Thomas Hodge, of Wheal Grenville—and their report I have now the pleasure of handing you annexed. I may add that one reason for selecting these authorities is from their knowledge of the changes to which the great flat lode is subject in the Illogan and Camborne district, and to which the lode in this mine bears a striking resemblance. JOHN HOCKING.

Redruth, Sept. 16.

Wheal Jane, Sept. 12.—In pursuance of your request I have this day inspected the above mine, and now beg to hand you the following report:—This mine is situated in the parish of Kea, and not far from the once celebrated rich mines of the Gwennap district. The main lode of the mine has been wrought on to a depth of 80 fms. below the adit, and from it very large returns of tin and good profits were formerly made; but about six years ago, like many other mines of the county, owing to the very low price of tin, the deep and more expensive parts were abandoned and the water left in to the adit; since which operations have been carried on above that level, and some hundreds of tons of tin have been raised and sold, and there is still a great quantity of good tin ground standing above the adit level, where there are several pares of tributers working at present at an average tribute of 12s. in 1*l.*, at a standard of 50*l.* the ton of tin.

To the west of Wheal Tremayne shaft, in the bottom of the shallow adit on the flat lode, there is a pitch working by nine men at 12s. in 1*l.* The part of the lode being carried is from 12 to 14 ft. wide, and worth for the width fully 30*l.* per fathom. No. 2 pitch, still further west at the same level, is being worked by four men at 12s. in 1*l.*; the part of the lode being carried is 10 ft. wide, worth 20*l.* per fathom. In both of these pitches there is still more paying ground standing to the north, as in some places the lode and branches have been worked for 22 fms. wide, and as far as seen I should judge that there must be very much of about the same quality ground standing about this level. In No. 3 pitch, on the same part further west, there are six men at 12s. in 1*l.*; lode worth about the same as in the other pitches—20*l.* to 25*l.* per fathom. There are two other pitches working on the north part by 12 men at 12s. in 1*l.*, where the lode produces some very rich tinstone. By the former agents the above ground was stoped on tutwork or by the ton, when it was to the interest of the miners to break the ground without discrimination or any attention whatever to the quality of the stuff; while on the tribute system, now adopted, it is their highest interest to select the best portions of the lode, and send to surface only that which contains tin in good paying quantities. The price of tin having advanced some 10*l.* a ton above what it was when the water was left in the mine, it was thought advisable to again drain the deep workings, where no doubt great quantities of ground are still standing that will pay with the advanced price of tin. A new 60-in. cylinder engine has been erected with new pitwork and set te work and the mine drained to the 60, and at this level a pare of men have been placed to drive north to cut the north part of the lode which is being wrought on above, and is thought to be standing whole in that direction. This cross-cut is already in lode matter, from which I broke some good stones of tin to-day, and from the appearance of the hanging or head part of the flat lode here I have no doubt there is a great quantity of paying ground still to be taken away, and upon further development there is every prospect that good discoveries will be made.

READY MONEY LODE.—At the deep adit a cross-cut has been driven south 18 fms. (11 fms. east of Gilbert's shaft), and intersected the Ready Money lode, and a level has been driven east upon it, where for 15 fms. long the lode is from 3 to 4 ft. wide, and worth from 8*l.* to 10*l.* per fathom. This is good paying ground, as it can be stoped for 3*l.* per fathom. A rise has been put up in the back of this level to the shallow adit, by which good ventilation has been secured, and the ground laid open for stoping. Eight men are engaged stoping back of level, east of rise, at 3*l.* per fathom; lode worth 8*l.* per fathom. A level on this lode west of cross-cut is to be commenced forthwith, where the lode is worth 8*l.* per fathom. A cross-cut has also been driven at the shallow adit just over the one at the deep adit, and the same lode cut and driven upon 4 fms. east and 7 fms. west; lode in each end about the same size and value as at the deep adit, worth 8*l.* to 10*l.* per fathom. There are six men in each of these ends, driving at 5*l.* 10*l.* and 5*l.* 5s. respectively. This lode is likely to yield great quantities of tin, as it is standing entire in this mine, where you have fully 500 fms. on its line. In the adjoining mine to the west it produced large quantities of tin. It can also be reached easily by cross-cuts at deeper levels from the flat lode, a cross-cut having been already driven 16 fms. in that direction at the 16 under adit; a few fathoms further driving would reach the lode, when there is every reason to believe good results would be met with, thus opening up a fairly good mine on this lode alone. The mine is thoroughly supplied with good machinery. There is one good 60-in. cylinder pumping-engine with two good boilers attached, and a splendid steam capstan driven by double 10-in. cylinder horizontal engine. A powerful 30 in. cylinder stamping engine, working 60 heads of stamps, with additional axles for 20 heads more, which can be set to work as soon as there is stuff enough raised for them. There are four good boilers to this stamps. There is a good stone breaker and an engine for driving jiggers, &c., on the floors. There are also one 24-in. and one 20-in. winding-engine, three calciners, and two burning ovens, &c. The present returns of tin are about 10 tons a month, and it will require only about 2 tons of tin a month more to pay the costs of the mine, and I have no doubt that this and even a larger quantity will very soon be raised; in fact, I believe there is every reason to expect that the mine will soon increase her returns, and be placed not merely in a paying but in a profitable position. I consider this property to be a sound one, which will only take a little time and very little money to put it right.—CHARLES CRAZE, South Frances Mine.

Wheal Jane, Sept. 12.—Agreeable with your instructions I have carefully inspected the above mine, and beg to hand you the following as my report thereon:—MACHINERY.—One 60-in. cylinder pumping-engine with two boilers. One 24-in. cylinder winding engine with one boiler. One 20-in cylinder winding engine with one boiler. One 30-in. cylinder stamping engine steamed by four boilers, with a large battery of stamps capable of making large returns. One large stone-breaker. A pair of capstan engines, 10 in. cylinder, to drive capstan. Three calciners, and two ovens, with buddles and other appliances with a little addition sufficient to make large returns of tin. The water is now drained to the 60, or within 20 fms. of the bottom of the mine. The old pitwork has been drawn to surface and replaced by 60 fms. of new 17-in pitwork with main rods, &c., complete and in good working order.

GREAT FLAT LODE.—I find it impossible to examine the lode satisfactorily from the deep adit downwards on account of its being slimed over, but judging from the ground taken away by the former workers, I believe that there is much ground standing that will pay well to come away on tribute with present price of tin. At the 60 a cross-cut is started to go north to prove the hanging wall part of the lode; the south part has been taken away, which proved rich in tin. I may here remark that the lode is very wide, and the former workers paid their greatest attention to the south part, neglecting the north. So far as my experience goes a great vein of this class is found rich in tin at times on either side, and I think it advisable that the hanging part should be proved by cross-cutting at different points: this done I feel sure that some important improvements will be met with. Two tribute pitches are being worked in the back of the deep adit level, and three pitches in the bottom of the shallow adit, at 12s. in 1*l.*, to be paid at the rate of 50*l.* per ton for black tin, and from the appearance of the lode the men will earn good wages.

READY MONEY LODE.—At a point 11 fms. east of Gilbert's shaft a cross-cut has been driven 18 fms. south from the deep adit to the lode, and a level driven east on its course about 45 fms., the first 15 fms. passed through a lode worth from 7*l.* to 10*l.* per fathom, remainder of the drivage from about 30 fms. behind the end, a flookan course crossed the vein which changed the slate into a dark barren rock. One stope in the back of said level is worth 9*l.* per fathom, working at 5*l.* per fathom. No level driven west, but should be started when an opportunity presents itself. At the shallow adit level the vein is reached by driving south—say, about 15 fms.—and driven east in its course 4 fms. in a lode worth 9*l.* per fathom. The western end is driven 7 fms. in a lode worth 9*l.* per fathom, a rise is put up in the back of said level 3 fms. in a lode worth 9*l.* per fathom, the workings here are ventilated by means of a rise from the deep adit. I am informed that the rise passed through a productive lode the whole distance, the vein throughout averages from 2½ to 5 ft. wide with a very fair underlay, embedded in clay-slate. At a point near Gilbert's shaft I find a cross-cut has been driven south 16 fms. towards the lode at the 16, and will reach the vein in another 10 fms. driving. I advise the driving of said cross-cut at once if the lode be found productive, as in the above stoping ground might be opened out quickly. The returns of tin with the number of hands at present employed below ground, I set down from 11 to 12 tons a month, which will about meet expenses, and when the ends are further advanced at the shallow adit to admit of stoping, the returns will increase to 15 tons and still gradually increase as the mine is opened up. I consider the 60 cross-cut going out to cut the hanging part of the flat lode a very important point—and if it be found so productive as I am led to believe, it will greatly enhance the value of the mine, and further induce you to drive other trial cross-cuts, where some important discoveries may be made. On the whole the mine holds out good promise, and if the different points named above turn out as well as indications lead me to expect, the mine will soon be again brought into a profitable state.—T. HODGE, Wheal Grenville.

THE PAPER LITIGANTS.

SIR,—I am and always was opposed to unnecessary war, even upon paper, and that sort of war now going on between Mr. H. G. Sharp and Capt. Southey, being unnecessary and useless, had better cease. Allow me, therefore, as a friend of both those gentlemen, to suggest an armistice for at least three months, by the expiration of which period they would probably become reconciled to each other, and would shake hands and express regret on account of any unloving expsession used, and admit that, notwithstanding differences of opinion, they are severally honest in their purposes. R. S.

Sept. 20.

PILLATON CONSOLS MANGANESE MINE.

SIR,—An important discovery of rich, soft, and crystallised manganese ore has been made in this mine, two east and west lodes having been met with, and one north and south lode, which forms a junction with the east and west lodes, also a fine-looking cross-course. A quantity of good ore has been taken to surface, and as it is found in the side of an immense hill adit levels are to be driven on the course of the lodes, enormous backs will be gained, and the lodes laid open for stoping with all dispatch. The adjoining mine has been worked 100 fms. below the surface, and made very rich in depth, and it is generally believed by experienced authorities that Pillaton Consols will prove an exceedingly profitable mine. A 21 years' lease has been procured; royalty or dues, 1-18th. I understand a company has been formed, in 6000 shares, of 1*l.* each, and it is confidently believed 10s. per share will provide ample capital for development, erecting water-wheel, ore crusher, &c. It may be mentioned that the mine is situate in the parish of Pillaton, in the county of Cornwall, 10 miles from the town of Plymouth and four from Callington. Mr. H. N. Nevins, Plymouth, has undertaken the duties of secretary. I am informed the discovery in the mine has caused some excitement in the district, which has led to other mining grants being obtained. ——— BOVEY.

THE COST-BOOK, AND LIMITED LIABILITY

SIR,—I cannot understand your correspondent, "J. A. H.," who appears to be aware of the recent correspondence in your valuable Journal, and yet by the questions he asks ignores the points that have been clearly established, and indeed admitted by both sides in the discussion. In reply to him I would repeat what others have proved—that while a holder under the Cost-book remains on the books there is no limit to his liability; he is liable for all the debts of the company—not his proportion only—will have to pay for those who cannot; and this liability remains for two years after he ceases to be a shareholder. While I have pen in hand I would notice a remark made by another writer in the Journal, who refers to the recent rise in the price of shares in some Cost-book mines, and then states, "And yet some persons say there is no good to be found in Cost-book mines." Will he tell us who these "some persons" are? I have seen no such statement made, and this is the way the Cost-book advocates mislead. Many mines in Cornwall, carried on under the Cost-book system, have been very rich and profitable, and the firmness in the metal market is naturally causing an advance in mine shares, but how does this affect the question of the liability of shareholders, which has been the real question under discussion? I fear it must be conceded that there have been at least as many unsuccessful Cost-book companies as successful ones, but a very few of the former would probably be more disastrous for shareholders than any number of the same kind of limited ones.—*Sept.* 22. R. E.

THE CALLINGTON DISTRICT, AND ITS MINES.

SIR,—Since my last I am pleased to say my former predictions are verified respecting Lady Ashburton and Callington Consols; they are both producing splendid copper ore. The Silver Hill tunnel is progressing very satisfactorily, and appears certain to be very near the Dreamer's lode; when intersected, from what I have seen of it where opened at surface, I have every reason to believe they will find it to be saving work for copper ore. Wheal Luskey and Trebartha Lemarne are opening up well. The Trebartha lode at present is all saving work for tin, and the Luskey lode greatly improved in going to the hill; instead of its being all gossan it is now quartz and felspar, impregnated throughout with rich yellow copper ore. Redmoor and South Kelly Bray I think ere long will show up something to startle the most anxious expectant; they are pushing on the engine-house with all speed, and the timbering and clearing up the shaft is also going on quite satisfactorily, and, as the shaft is dry below the 100, it will not take long to be in a position to sink under the 125 fm. level. I see the Wheal Brothers party have commenced operations on the silver, and I hope shortly to see the water out of the shaft on the tin lode at Silver Valley, which is held by the same proprietors. The tin

lode at the present price of tin cannot fail to make good profits, as there are thousands of tons of the lode laid open at present that can be let on tribute at from 8s. to 12s. in 1*l.*; the last parcel of tin we returned from there was sold at 34*l.* per ton, now about 60*l.* There was never more that 12s. in 1*l.* given the last working, and some let at 8s. in 1*l.*

Looking at mining in this district now and looking back from 30 to 40 years ago the former was playing at mining, and now people are going at it in right good earnest. Capitalists would do well if they put some of their spare cash in this district, for within twelve months I believe a great many of the mines will double their present price.—*Callington, Sept.* 21. ——— JOHN BUCKINGHAM.

CALLINGTON CONSOLS.

SIR,—I am highly pleased to learn that the discovery which was recently made at the Callington Consols Mines at the 45, east of Fookes's engine-shaft, is still looking exceedingly well, and that 30 to 40 tons of high quality copper ore has been hauled to surface, which will soon be ready for sampling. The engine-shaft is sinking in a splendid channel of ground, and already stones of copper and silver-lead ore have been met with—this being a very important feature, as it clearly shows that we cannot be far from a great course of ore. There is also tin discovered in the Tonkin shaft, producing from 1 to 1½ cwt. to the ton of stuff, and which is all in virgin ground for 160 fms. This alone is sufficient to put the whole of these mines on the dividend-paying list, and undoubtedly this will be the case as soon as the necessary machinery for stamping, &c., has been erected, and the stuff made marketable.

London, Sept. 22. AN INVESTOR IN CORNISH MINES.

GREAT WHEAL VOR.

SIR,—The author of a letter inserted in the Journal under the heading of "A Plea for Wheal Vor" should understand that the stamping-mill referred to in the prospectus of New Great Vor was a steam stamping-mill, the starting of which I witnessed in 1815. I believe that it was the first of such engines erected in England. Almost everyone knows that water stamping-mills existed hundreds of years earlier.—*Truro, Sept.* 20. R. SYMONS.

SILVER VALLEY MINE.

SIR,—As so much misconception and conflicting opinions exist in regard to Silver Valley, in the parish of Ladock, Cornwall—some asserting and some denying the existence of the mine, and some stating that it is a good and others that it is a bad mine—I purpose sending to you shortly a statement of facts, which I hope will set disputes at rest in relation to those points. I have no interest in the property, and no bias *pro* or *con.*; but I wish the public to know the facts, and to them I will confine myself. R. SYMONS.

Truro, Sept. 20.

WHEAL CREBOR AS A SPECULATIVE MINE.

SIR,—Some sensible and apposite remarks were made by Mr. Watson in the Journal of Sept. 3 to the effect that while there were numbers of persons ready to rush into mere speculations a sound and proved mine, like the above, was comparatively neglected. There have been, as he remarks, numbers of mines brought out of late on the Limited Liability principle (a principle that though a plausible one to the simple but deceptive to some) with capitals varying from 30,000*l.* to 100,000*l.* and upwards, of which mines nothing whatever is known to outsiders, all is pure speculation, all rest upon the good faith and integrity of the promoters and the ability and judgment of the mining experts they employ; and even granted these are all that could be desired, results may on experiment prove unfortunate. Yet here is a mine like Crebor, with great future promise, and yielding present results—a mine cheaply worked and kept in repair, selling at a price, although paying regular dividends—less by far than many less prosperous concerns. What can be the reason? Perhaps one is that numbers of those who rush to buy shares in these undertakings merely buy but never pay for them, relying on their going to a premium for a few days and then selling. Another reason may be that arising from the spirit of speculation inherent in many: the "all or nothing" principle. They fancy that in a new thing they would have all the benefits—however problematical—that may arise. And to many there is a most awful charm in novelty; but many mines, and Crebor is one, can supply all the interests of speculators (since its promises for the future are great), and the certainty of regular present dividends. A SHAREHOLDER.

Hamilton, Sept. 13.

MINING IN CARDIGANSHIRE.

SIR,—With an advance in lead we may reasonably look for a revival in mining, and doubtless means will be taken to reap the benefit of the discoveries recently made in the above county. During a recent visit opportunities have not been wanting to show me that a healthy tone is being secured, and that ere long many properties will show their capabilities by emerging through the clouds which have hitherto obscured their legitimate success. One of your correspondents advocates the good maxim of not eating the calf before it is veal, in contradistinction to those who seem to think that mining can be as easily carried on as their flippant pens would dictate. These are sermons in stones, but the pedagogue does not stop to study the great law of nature, but is often to be seen searching at at the bookstall for much matter at very little cost. Whereas mining, as practical men know, requires time, money, and unflagging energy to bring it to a success. Taking one out of the list of the many mines recently maligned—I know for a fact that the whole capital of the concern is secured in actual reserves of ore, and from the very surface I have taken one lump over 60 lbs. in weight, and from 5 to 7 in. in width of silver-lead. Wishing success to all well managed mining enterprises, I do not give names, but this I do say, that the mines will shortly tell their own tale by continuous sales of mineral.—*London, Sept.* 22. ——— TRAVELLER.

[ADVERTISEMENT.]

VALUABLE ANTIMONY SETT.

SIR,—A few weeks since in an advertisement which I addressed to promoters of public companies I stated that one of the most valuable antimony setts that has been offered to the public for many a long year might now be obtained by negociation through me. Since I published that announcement they have made a further discovery in virgin ground of a lode 2 ft. wide solid antimony stone, of which they have taken out from 1 cwt. to 3 cwt. in a rock. The mine was worked abont fifty years since, when antimony was worth only a few pounds per ton; it is now worth 20*l.* to 30*l.* The property can be worked with little expense, as there are backs above the adit level that could be brought in over 30 fms. I have seen many antimony lodes before, but I never saw such a prospect so near to the surface.—*Wadebridge, Sept.* 22. W. PAYNTER, jun.

P.S. (Telegram).—There has not been such a rich discovery of antimony in North Cornwall for the last 25 or 30 years.

PECKHAM TECHNOLOGICAL SOCIETY.—It is at all times gratifying to see young men, and especially working men, banding themselves together for mutual improvement, and the Sonth of London is again to be among the first in the Metropolis to aid in striking out a new course in what may be termed the diffusion of secondary science. Just as in 1808 the Surrey Institution was at once inaugurated in imitation of the Russell Institution then just formed under the auspices of Sir Samuel Romilly, so in 1881 the Peckham Technological Society has now been established, in imitation of Sturman and Green's Hornsey Society of Science, and promises to be successful in an equal degree. The society is to hold its weekly meetings at the Goldsmith Road Mission, where the introductory free lecture will be delivered on Friday next by Mr. Hugh Clements, a fellow of the parent society and a member of the Society of Arts. The prospectus states that the society has been established for the mutual intercourse of all who are interested in the sciences as well as those engaged in any art, industry, or manufacture based upon them. Again, it is stated that papers will be read weekly by competent men on some art, industry, manufacture, occupation, profession, or trade, and the sciences connected therewith, and afterwards discussed by the members. There is one point in which the Peckham Society appears to have, perhaps, too closely imitated its Hornsey prototype—similarly illegible chromograms have been used to announce its existence and intentions. There are to be a president, vice-president, and members with a council elected for their special and practical knowledge of the various sciences and arts, referred to in the extensive series of manuals published by Mr. Stanford, of Charing Cross, and a few others, so that it will be difficult to find anyone in the United Kingdom ineligible for membership; hence it may be anticipated that the society will be a great pecuniary success for the promoters, and will afford many hours of rational enjoyment during the coming winter evenings to the aspirants to scientific celebrity of whom so many reside in the neighbourhood.

OUR GOLD SUPPLY—ITS EFFECTS ON FINANCE, TRADE, COMMERCE, AND INDUSTRIES—No. III.

BY THOMAS CORNISH, Mining Engineer (late of Australia).

Author of "Gold Mining, its Results and its Requirements."

It is surprising that our gold supply has not attracted more attention and earnest consideration from financiers, statesmen, writers on political economy, and others so deeply interested in its production, as its effects on the money market are somewhat magical, as instanced at times in London when reports have gained currency that none or very little gold was being sent from Australia.

While discussing the question of our gold supply in the colonies, I have been met with some very absurd arguments—such as, "Oh! gold is only so much trash. You can't eat it. You can't drink it. It is only useful as a medium of exchange. Any other metal would do equally as well for exchange purposes." "If" (that little word), "If it were only made a legal tender," one anonymous writer, questioning, what he termed, my peculiar views on the value of gold, asked which I would prefer, being in "a desert with a loaf of bread and a glass of water or a bag of gold." I replied, under such circumstances I should prefer the bread and water; but I asked my would-be critic "which he would prefer in a centre of civilisation, 100 golden sovereigns or a loaf of bread and glass of water," he replied, "Unquestionably he would prefer the 100 sovereigns, because it would there represent many loaves of bread and other necessities."

On the publication of my pamphlet in Victoria in 1875, "Gold Mining, its Results and its Requirements," the reviewers in the Press, while giving me every credit for practical knowledge and experience of the requirements of mining, mostly took exception to my views on the value of "gold as real wealth and, in what they termed, my speculations on matters of political economy; some of them doubted whether I had paid sufficient attention to one of the problems which have been mastered by political economists." With all due respect to the reviewers of my work and their opinions of my views on the special value of gold as real wealth, the mere echoing of opinions of some writers on political economy did not in any way convince me that I was in error, or that the attention I had given to "Gold Mining, its Results and Requirements," had led me into the statement of views I did not thoroughly believe in. In reply, I think I may fairly ask whether they and others who are apt to make such crude statements about the value of gold have paid sufficient attention to the results of its production.

I wish particularly to draw the attention of those who may dissent from, or be inclined to criticise, my views on the value of gold that I am well informed of the fact that we cannot eat or drink gold; and that there are many times and circumstances in which gold of itself would be valueless—such as in a desert, in an uninhabited island, or uncivilised country, in time of shipwreck, or other disaster. Nor do I desire to speculate in abstract theories of what may be the value of gold supposing some other metal or substance was made a legal tender, and to answer the purpose of coin throughout the civilised portion of the world. I am quite content to base my theories on "the value of gold" upon the positive fact that it is, and has been for ages, the metal chiefly recognised and adopted as specie, or as a medium of exchange and currency for regulating the value of other commodities. That it is a form of wealth that all sections of civilised humanity from the cradle to the grave are desirous of acquiring, that all nations, creeds, and countries are striving with each other to become its possessors as much as possible. That the nation or country that has most gold is enabled to make the most rapid progress, and that it has a talismanic effect on the development of other industries.

I have carefully watched the results of the productions of gold not only upon people of the community who produced it, but also upon those who became participators of its advantages when produced, and confidently assert that its production is one of the most important questions of the present day, and that it more directly affects the general prosperity of nations and individuals than does the production of any other article of supposed equal value. There is a great difference between the producers of new gold and the concentrators of existing wealth. A few miners producing (say) 100,000*l.* in virgin gold from the earth does more good to the community in which they reside than persons who make a fortune of that amount in trade or business; by the production of new gold no one is injured and many become benefited, as it is an immediate addition to the bullion capital, and on its basis additional wealth becomes created by the extension of credit and the issue of paper money based on the security of gold. But the concentration of a similar amount in the hands of few traders benefits the individuals only, while injuring those from whom it has been gathered. It is not an addition to the world's capital, but only a concentration from the many to a few.

In advocating the special value of gold as a superior form of wealth, and the importance of developing gold mining to maintain the supply requisite for the uses of finance, trade, and commerce, it is not to be supposed that I in any way depreciate other forms of wealth, or undervalue the various industries of the world that all tend to promote prosperity and supply the wants of mankind. It is, and has been possible, by people being possessed of sufficient to supply their wants in the shape of food drink and clothing to be considered wealthy without being possessed of either gold or silver, but that wealth consists chiefly in a contended mind, a clothed body, and a filled stomach. The wants and desires of intelligent humanity are not in these days confined within such narrow limits—custom, the usages of society, and the general desire for knowledge, with the requirements of finance, trade, and commerce, render it necessary that a supply of gold should be continuously produced in quantities proportionate to the increase of population and their necessities. To insure that supply it is necessary to consider the source from whence it is derived, for while other articles of value may be produced in profusion, and yet add but little to the world's wealth, gold, the solid basis or foundation of other wealth, the article of special value which all mankind are seeking for, can be procured, or its supply increased, only from one source, that is by gold mining. All the clever systems of finance, the issue of paper money, the trading and manufacturing resources of the country, will not add new bullion to the currency of the realm—that can only be obtained by the miners who seek the precious metals in the earth.

Gold mining, or the production of gold and silver, is not only the means of creating a previously unknown wealth, or permanent purchasing power, that did not before exist, but the nature of its operations is such that it affords more means of employment and uses up more material and appliances than any other labour, thereby opening up new channels of industry that would not otherwise be called into existence, and disseminates its influence over a wider range and amongst a greater number of people than can possibly be done by the production of any other articles of use, trade, and commerce. The very nature of the occupation of gold mining, especially in the early days of the gold fields, seems to have imbued the miner with a spirit of recklessness and extravagance, so that no matter how readily the gold was acquired it was spent as freely in the most heedless and unbusiness-like manner; in fact, the gold was in many instances literally thrown away, and poured in the pockets of other people, without the trouble of their seeking it.

To give instances of the reckless extravagance of gold miners in the early days of mining would be merely to reiterate tales often told of the follies it was possible for men to perpetrate. The gold so recklessly squandered by them was spent chiefly in the purchase of high priced goods and liquors from England, the imports for some time being from 50*l.* to 70*l.* per head per annum of population in Victoria, including women and children. The benefit the colony of Victoria has been to England during the past quarter century may be imagined from the fact of her having sent here not less than 200,000,000*l.* in solid gold, which has been absorbed in the extension of finance, trade, commerce, and manufactures, besides other produce, of wool, &c., thereby causing an enormous increase of general business, and adding materially to the wealth of the nation.

The effect of so vast an addition to the purchasing power of England from the gold fields of Australia and America has been apparent in the great financial undertakings that have been entered into, the increased wealth, business, and value of property. When speakers and writers express opinions that colonies are of no advantage to England they can surely have given but little attention to the value of the production of gold from Australia, and its effects upon finance, trade, and industry in Great Britain.

If, as it will I think be conceded, an increased production of gold must, as a natural consequence, be of great advantage to the country in which it is produced, and to those who invest their capital in its production, it will not be out of place here to consider the best means by which an increased supply of gold can be ensured. Gold mining is, I consider, one of the most honourable, legitimate, and honest occupations that a man can follow. "The golden treasures of Nature's national bank of issue" are obtainable by all who open an account with her. By industrious, economical, and scientific explorations the riches of the earth can be obtained without respect of persons. Some of course will be always more successful than others in accumulating its treasures, but with all who follow mining as an occupation on their own account there is a hope and possibility of becoming a prosperous and lucky miner. It encourages and fosters an independence of character that belongs to no other kind of labour. The results of prosperous mining are different from the results of prosperity obtained by other labour or business. Thus, the miner who wins the gold from the earth produces a wealth previously unknown, that immediately it is produced is a benefit to the producer and all around him. It is the metal for currency to effect rapid exchanges and the gratification of tastes and habits, which act on trade and commerce like the life blood on the human system.

The more gold obtained the greater are the wants of those who obtain it. If the miners only obtain on the average a few pennyweights each weekly their expenditure is confined to that; but if the same amount of labour that produces only pennyweights should by a change of luck produce ounces then all other members of the community participate with the miner in his improved and increasing means of wealth. Thus it is of far greater importance to the general public to hear of the discovery of a new gold field, or the improved prospects of an established one, or of any new mode of extracting more gold from the matrix operated upon than it is to hear of the rise in price of wool or meats, because the increased yieid of gold benefits the general public, while the rise in prices of wool, grain, or meats is a loss to the general public, who have to purchase them, and a gain only to the producers.

I have often endeavoured, during the past 25 years, to impress on the miners and business men in Australia the necessity of establishing mining on a more souud and satisfactory basis than the scrambling, harum-scarum manner it has hitherto been conducted. Gold mining may be classed under two distinct headings—alluvial and quartz mining. Alluvial mining consists in the treatment of alluvial deposits on the surface or in shallow or deep leads, and are the deposits arising from the disintegration of quartz lodes operated on by atmospheric action and flood waters in early stages of the world's formation. Surfacing, in which the first deposits of gold were mostly found, lies chiefly on the tops of quartz ranges on the sidings or points of range and heads of gullies or flats, and the gold may be distributed in the gravel, mould, clay, or schist formation from a few inches to a few feet in depth, to be separated therefrom by the ordinary methods of sluicing or washing by tubs, cradles, puddling machines, or crushing batteries.

In surface or shallow mining, unless the gold is distributed throughout the soil or gravel, it is not usual to strip off more than from 6 to 12 ft. Over that depth shafts are sunk to raise the auriferous gravels for washing; leads or gutters are the ancient water-courses, the beds of which contain auriferous gravels more or less rich in gold; the trend or course of alluvial leads or gutters for the most part follows the course of main creeks or rivers on the surface; the width of levels, the thickness, and quality of wash-dirt vary considerably, and the sinuosities of the leads or gutters are so great that it is often exceedingly difficult to trace their course.

The working of alluvial leads or gutters varies according to the depths and difficulties of sinking the shafts; dry shallow sinking may vary from 10 to 60 ft. in depth, the size of mining claims also varying according to regulations of mining districts, the number of men to a claim from two to ten. The mode of extracting the gold is by the old fashioned process of tub and cradle, or puddling machine. In some districts the surfacing or terraces of auriferous drifts and gravels are washed by slucing, but deep sinking varies from upwards of 100 ft. in depth to the present deepest shafts in Ballarat. Alluvial leads of about 500 ft., the area of claims varying according to the regulations of the colonies. In Victoria the area is, practically speaking, unlimited in some districts; the greater the depth of sinking, with difficulties of rock, drifts, and water to contend with, it is essential that a large area of surface should be held as a claim to ensure a proportionate share of auriferous wash in the gutters; thus deep alluvial claims vary from 50 to 500 acres, and in some cases nearly 1000 acres in extent; the number of men employed in working a deep wet mine also varies according to circumstances, the depth of shafts, the area of claims, the amount of ground opened for blocking out, and the extent of machinery and appliances for washing, and there may be from 50 to 500 men at work in a mine.

Quartz mining is on lodes or veins of quartz, and are known as vertical, flat, or underlying lodes, which for the most part have a northerly and southerly course, with occasional cross-cuts east and west. A main line of quartz reef or lode is a body of stone encased generally between two well defined walls of schist, with foot and hanging walls, and may vary in thickness from a few inches to several feet, and in yield from a few grains or pennyweights to several ounces to the ton. Some main lodes, or true fissure veins, are traceable for great lengths and depths. A cross-course or dyke occasionally cuts across the course of a lode, causing a heave or throwing the lode out of its ordinary course, which makes it difficult sometimes to find it again. In some parts of Victoria, notably in the Sandhurst district, there exists saddle reefs, some of which have proved remarkably rich, and are being profitably worked to great depths.

Gold mining, while being of a very speculative character, often delusive and disappointing in its results to many, has been highly profitable to and laid the foundation of great success to large numbers who made it a stepping stone to fortune. The production of gold might have been materially increased and made much more profitable to the producers had it not been for the great waste of labour and capital through ignorance in management and want of system in directing mining works, and the want of efficient appliances and machinery for working mines more effectively. In consequence I estimate fully 50 per cent. of all capital and labour invested in mining in Australia has been wasted or misapplied. There are many practical and intelligent miners who from force of circumstances have been and are now unable to utilise their local knowledge and practical experience of mining to the best advantage. When progressive or prospecting mining is determined on it should be pushed on with all possible speed, as the quicker the anticipated results are proved the better for those who have to pay for it. I have known shafts that have been years in sinking to a few hundred feet, whereas the work ought to have been done in a few months. Thus time and money become frittered away without arriving at any satisfactory results. In shaft sinking or other dead work as many men should be

kept at work below as can be conveniently employed, there being no more surface labour required for four, five, or six miners in a shaft than there is for one or two. Gold mining labour is different from all other kinds of labour in this respect—if it be misdirected and its results unprofitable, it is an absolute loss of all it cost, and cannot be regained; but the labour of any other industry is seldom if ever an entire loss, as there are generally some returns to partially recoup the employer.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS &c.
1, ST MICHAEL'S ALLEY, CORNHILL, LONDON.

Nearly twenty years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, published annually in the *Mining Journal* for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash, for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charge for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in on the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

Messrs. WATSON BROTHERS take this opportunity of stating that on July 1 they took into partnership Mr. H. J. DEAN, who has been for a number of years asssociated with the firm, and Mr. W. H. H. WATSON, who has had some years experience of practical mining and engineering in Cornwall, and is the son of the senior partner. The firm will still be called that of "Watson Brothers."

The number of weekly communications received from almost every part of the world in regard to remarks in this Circular indicate so plainly how much they are read (and, we trust, appreciated) that they will be continued by the same writer.

Indeed, while new blood is introduced to attend to the more laborious and mechanical details of the business, the old will have more time to devote to heir different departments.

Accidents will happen occasionally, even in mines, and the responsibility under the Employers Liability Act has been referred to of late by more than one correspondent. We are reminded that the Railway Passengers Assurance Company has been and is one of the most successful institutions of the day—the original 1*l*. shares having risen, we believe, to above 50*l*. per share; and it is thought a "Miners Assurance" would not only be a success in a pecuniary point of view but a great boon to the mining interest. If mining capitalists and managers of mines were to take the thing up no doubt ample capital would be forthcoming; but the working details and tables of risk could only be properly introduced by an able and experienced actuary. As a rule, we apprehend deaths from accidents in Cornish mines are very rare, and if every mining company would insure for a small sum annually (for each miner employed) against the risks they run under the Employers Act a good income might be insured for a company, and a great responsibility removed from the shoulders of the agents and shareholders in mines. At any rate, the matter is worthy of discussion and ventilation. We do not profess to know ourselves how to calculate risks in such cases, and the consequent subscription that would cover them.

Our attention has been called by more than one correspondent to the remarks of the Times, incidental to the prosecution of Reynolds, the promoter of Silver Valley Mining Company, &c., wherein the writer stated in general terms that "mines, and *above all Cornish mines*, are notoriously unsafe *investments*." Leaving out the words "and above all Cornish mines" we cannot say that the Times, strictly speaking, is so very far wrong. Mines have never been looked upon as "permanent investments" in the ordinary sense of the term, but dividend mines pay the highest known rate of interest at times; and our advice to investors has been, and is, to spend 5 per cent. of mining dividends, and capitalise the rest.; and by this means very often more than the original outlay may be got back, and good dividends continued. If a mine pays 20 per cent., and 15 per cent. is capitalised, the investor gets back all his capital in about six years, and then may go on receiving dividends for years afterwards; and in regard to non-dividend properties *we* have endeavoured to show in this column for years past that all mining is a *speculation*, and that no one should embark in it unless it be with money that he can afford to lose. It was this consideration that led us nearly 40 years ago to recommend a division of risks (on the principle of insurance at Lloyds) in a number of mines, so as to insure success in the aggregate. Thus, if anyone chooses a few shares in half-a-dozen *bona fide* and properly conducted mining speculations, and half of them are unsuccessful, the other half may yield a profit on the whole transaction. And why we take exception to part of the Times' remarks—"above all Cornish mines"—is this, we can at any time, and so can any shareholder, for a fee of two guineas have a property inspected by an independent agent, and learn its true position, while in foreign mines this cannot be done. We, therefore, look upon home mines as the safest speculations.

In reference to such mining companies as those which called forth the remarks of the Times the public have been constantly cautioned against them in this place, and the whole mining market freely denounced them; but the poison reached every part of the country in private circulars, and permeated into circles where mining had never been heard of before, and the bait of premiums and the wondrous profits promised, led the newly found "English investors" to rush into them like flocks of sheep. Those to whom they were as "red flags flourished in the faces of mad bulls" were those who saw legitimate mining thus outraged and discredited, and could do so little to prevent it.

We have said above that mining risks should be divided so as to secure success in the aggregate, and we now for the first time name a few mines in most of which we hold largely ourselves, and from which half-a-dozen may be selected for a speculation; and perhaps anyone choosing six will let us know twelve months hence the result of his spec, starting from the prices of to-day, and bearing in mind what we have said above—that mining is a complete speculation, and that no one can always be right. West Kitty, Wheal Crebor, Bratsberg, Parys Copper, Prince of Wales, Carnarvon Copper, Sortridge, Polrose, Morfa Du, East Blue Hills, West Crebor, East Lovell, and Bedford United.

Writing thirty-five years ago—that is, in reviewing the progress of Mining in 1846, in which year 28 British mines paid in dividends 158,830*l*. and five foreign mines paid 43,093*l*.—we penned a few remarks that seem wonderfully to bear upon a state of things we have had also to remark upon during the present year of 1881. Thus, we wrote in 1846—"Whilst so much attention has been turned to mining pursuits, as a natural consequence hosts of new companies have sprung up, under all kinds of curious and inviting names, and which for weeks have been paraded before the public in advertisements and puffs. Many of them got up by mere adventurers." * * * * "The specious sophistry wove around their actual prospects is sometimes as clever as it is deceiving, and parties, in many instances trusting to what seems fair and straightforward, but which in reality is sheer delusion, embark and lose their money, and end by denouncing all mining alike. Thus a slur and a stigma is in every way cast on honest mining by such disappointments, and it behoves all friends of Cornwall to be wary—the capitalist in getting good advice, the agents in reporting and recommending, and the Press in upholding directly or indirectly any but legitimate concerns."

Thus we wrote in 1846 and thus we might again write in 1881.

Half the purchase money of Bratsberg has been paid, and when certain things have been valued the company obtain possession; in the meantime they receive certain profits made and accruing. An instalment is due on the shares Oct 1, and the last on Dec. 1.

We have inquiries for one or two agents to go abroad.

Meetings of Public Companies.

SOUTH-EAST WYNAAD GOLD MINING COMPANY.

A special general meeting of shareholders was held at the New Exchange Buildings, George Yard, on Tuesday,

Mr. H. PALMER STONE in the chair.

Mr. W. H. THOMPSON (the secretary) read the notice convening the meeting, and also the minutes of the previous meeting.

The CHAIRMAN said: Gentlemen, the only business we have to do to-day is to put to you the confirmation of the resolution passed at the last general meeting—namely, that the Articles of the company be altered by the omission therefrom of article 32.

Mr. HEWITT seconded the motion, which was put and carried without discussion.

The CHAIRMAN said there was no other business to be brought before the meeting, but on the previous day the board had received the usual weekly telegram, which he would read:—"Crushed 40 tons. Tailings and pyrites not yet assayed. Have only tested few tons Tea reef. Amalgamating tables new, no definite test yet. Good progress being made." That was really all he had to tell them, but he might say he was convinced that as soon as the stamps and everything got into good crushing order they would be doing good work. They had already crushed 40 tons, and next week all the amalgamating tables would be in good order. These tables at first absorbed more gold than was afterwards the case.

Mr. ACKROYD: Have you any particulars with respect to the clearing up of the tailings?——The CHAIRMAN: No, the tailings are not yet cleared up. I expect we shall do it next week. As soon as we get the telegram we will immediately send it to the secretary of the Stock Exchange.

Mr. TREHERNE: No doubt you are a little disappointed at not getting more particulars.——The CHAIRMAN: No, we are not disappointed. We did not expect any further information before this date.

Mr. TREHERNE said he was somewhat disappointed that more particulars had not come to hand. He hoped when they did come they would be printed and sent to the shareholders.——The CHAIRMAN said it would be sent to the newspapers, and if it was of special importance and interest it should be printed and sent to each shareholder.——The meeting then broke up,

WEST PATELEY BRIDGE LEAD MINING COMPANY.

The sixth ordinary general meeting of shareholders was held at the offices, Gresham House, on Wednesday,

Mr. BAXTER in the chair.

The notice convening the meeting was read by Mr. J. JAMESON TRURAN, the secretary,

The CHAIRMAN said, he need hardly tell them that it was with a feeling of disappointment that the directors met the shareholders on the present occasion. The history of the undertaking was so generally known to all present that it was hardly worth while occupying their time in going over it, therefore he would be very brief in the remarks which he had to make. They had not only to consider the past and the present, but very seriously to consider their course for the future. The past was pretty well known to the shareholders, the last year's operations being extremely disappointing. On the last occasion when he addressed them, he was able to to do so with feelings of considerable hope and great expectations for the future. He was sorry he was not in a position to reiterate the hopes he then so confidently expressed, because the points he then relied upon had fallen off, and they had driven very considerable distances, and met with no remunerative ground. The chief points which the directors were then expecting would result in favourable results for the company were, first, the 67, in which they hoped to intersect the lode which had been so productive for so considerable a distance in the 56. In that they had been totally disappointed. They continued to drive it for a distance of 70 fms. from the shaft, and although they had indications time after time which were favourable, and led them to hope for good results yet, during the whole of that distance they never got into paying ore in that direction, and the directors, advised by Capt. Williams, abandoned driving. The other important points, which were carried on at considerable cost, were two main cross-cuts, which were commenced and carried on in the hope of intersecting the lodes which were visible at the surface, and which it was hoped would continue in depth, and that thus they would be able to develope very valuable deposits. These two were driven respectively, one to the south boundary a distance of 80 fms., and the other about 70 fms., but neither of them had intersected any ore, and therefore they had been abandoned. During the past few months the directors had considered it in the interests of the company to restrict operations as much as possible, and therefore at the present time the operations were confined to two points—one driving the 56, up to the gulf which crossed the sett, where Capt. Williams hoped from indications that he might intersect a good lode. The ground was more favourable at the present time than we have seen it for some considerable time past. The other point where they were driving was a cross-cut from the No. 2 shaft to intersect two lodes at a shallower depth than the 56 fathom level. The experience of the district was that, although the lodes were good to a certain depth, they did not hold down to any great depth, therefore the directors had decided to drive the cross-cut from No. 2 to intersect two lodes, which were known to exist there, and see if at that depth they could not develope any paying quantity of ore. The result of the year's operations had been a loss of 1481*l*., which was somewhat less than the actual loss on the working of the preceding year, but the difference was accounted for by the restriction of the operations during the financial year under consideration, and, therefore, there has been much less expenditure. The relative results had been 4322*l*. for the year 1880, when the produce of lead had been 2880*l*., whilst in 1881 the expenses had been 3115*l*., and the lead produced 1634*l*. Seeing the very unsatisfactory state of the mine, and the inability of Captain Williams to make adequate returns, the position of the company was seriously considered by the directors, and as a meeting was about to be called the directors, although they had every confidence in Capt. Williams, thought it desirable to have the opinion of an independent man—a man of position and integrity in the mining world, who should inspect the property, and give a report which could be laid before this meeting, so that the views of the shareholders might be taken as to the best course to be pursued. He suggested to the directors that Capt. Arthur Waters should be engaged, and accordingly arrangements were made, and about the end of August Capt. Waters visited the mine, where he was met by Mr. Harris, one of the directors. The instructions sent to Capt. Waters, he would ask the Secretary to read.——Mr. TRURAN read the instructions.

The CHAIRMAN said those were the instructions sent to Capt Waters; they are clear and explicit. He would now read Capt Waters' report.

The CHAIRMAN said he was not anxious to make any comments upon that report which were not absolutely necessary; but he was bound, in justice to the shareholders, to state the circumstances under which Capt. Arthur Waters made that report. The property was somewhat extensive, and would in his judgment, require a considerable time for the most able man to give a fair, just, and adequate report upon it. Capt. Arthur Waters, in the opinion of the directors, did not give that time which he should have done. He arrived at Pateley Bridge Station at 10 o'clock in the morning; he then had to go to the mine, which was four or five miles away, and he left Pateley Bridge Station again between five and six o'clock in the evening. The directors thought that was not sufficient time for the most experienced man to devote to a property of this magnitude, and to give a report upon which the directors could act under the peculiar circumstances of the company.

Mr. F. MANSELL: Was all that time devoted to the inspection of West Pateley?——The CHAIRMAN said it was not, for during that time other duties demanded Capt. Waters' attention. Feeling the importance which the shareholders must attach to such a report as to whether the company should be wound up or not the directors instructed the secretary to write to Capt. Waters.

The CHAIRMAN went on to say the directors thought it their duty to address that letter to Capt. Waters, but he was sorry to say no reply had been received. Therefore, he had simply stated the facts with regard to Capt. Waters' report, and he did not consider it necessary to make any further comments upon it. That practically embraced all he had to say to the shareholders, but he desired to take their views and opinions as to the future. There were, as he had mentioned, the two points of operations, which are now looking more favourable than they were. The directors had restricted the operations wherever it was possible to do so. Capt. Williams had consented to reduce his remuneration, and the secretary's remuneration, although it had been small, had been reduced, and the directors for the last year or more had taken no fees, and did not at present propose to do so; therefore the shareholders would see that every possible economy had been practised. He must ask the shareholders seriously to consider the future. There were two courses open—one to continue at as small a cost as was consistent with efficiency, and continue the driving of the two points he had referred to, and the other alternative was to stop operations altogether. He moved that the accounts of the company to June 30, having been examined and audited, be now passed and allowed.——Mr. HAMMOND seconded the motion.

Capt. DAVID WILLIAMS, in reply to Mr. Mansell, said he considered that during the last week or two the indications at the two points referred to by the Chairman were more favourable. There had, in fact, been a considerable improvement, and the nature and quality of the formation itself was more congenial for the production of lead ore and the matrix was more kindly. That was particularly the case at the 56 going west.

Mr. MANSELL said he had a greater opinion of the report of Captain Williams, who knew the district, than he had of the report of 20 visiting agents.

Capt. WILLIAMS said he had always expressed his opinion that there were great hopes of opening up paying mining ground. One portion proved rich in former times, and he believed that by going west they would get into good ground. As he had said, the indications were better, and he was in hopes of meeting with a cross-course every day. He reiterated his opinion that they would have a good lode in the 56, going west. The lode was now about 2 ft. wide.

The CHAIRMAN said that having regard to what the directors knew of the property, and also what Capt. Williams had stated, he thought the best course to pursue would be to continue operations with the greatest possible economy to the end of the year. He thought this might be left to the discretion of the directors who would call the shareholders together when they deemed it necessary. (Hear, hear.)

The resolution for the adoption of the accounts was then put and carried.

On the motion of Mr. IVIMEY, seconded by Mr. PEARSON, the retiring directors, Mr. Hammond and Mr. Baxter, were re-elected.

On the motion of Mr. MANSELL, seconded by Mr. NASH, the auditor, Mr. Carter was re-appointed.

A short desultory discussion then took place regarding what should be done in the future, and in the end it was decided to adopt the Chairman's suggestion, and continue the drivings for some little time at as economical a cost as possible.

A vote of thanks to the Chairman and directors closed the proceedings.

UNITED VAN CONSOLS AND GLYN MINING COMPANY.

The report of the directors prepared for presentation at the meeting at Llanidloes on Friday next states that the accounts for the half-year to May 31 show a debit balance of 1660*l*. 5s. 3d. The necessary steps have been taken to reduce the nominal value of the 2*l*. shares to 1*l*. per share. The old scrip has been exchanged for new certificates, and all the ordinary shares are now of the same denomination. Since the board was reconstituted, in March last, the directors have sold 160 tons of lead ore and nearly 40 tons of barytes, and the present output from the mines will now nearly pay the monthly cost sheet, and that too at the present low price of lead ore (8*l*. 9s. per ton). It should be mentioned that while the amount to the debit of the revenue account for the six months ending May 31 was 1660*l*. 5s. 3d., the deficiency in that account will be under 500*l*. for the three months ending Aug. 31. In order to pay off the debts accrued while the last board held office a sum of 3000*l*. was advanced by some shareholders residing at Newtown, who took a charge on the mine and the whole of the assets of the company, which charge will be paid off out of the proceeds of the debentures issued (5000*l*.), and the debenture holders will have a first charge upon the whole of the company's property.

Capt. James Roach, after referring to the various points of operation, states that the 50 fm. level, west of Gundry's, is not yet clear of the mass of carbonate of lime; they have now a branch of flookan in the footwall, which indicates an early change in the matrices. If they find a bunch of lead here, as they have every reason to expect, it will be a great acquisition to the property. The tributers are still working in roof of 40 fm. level, and all other work, including dressing, &c., is carried on with energy.

PELYN WOOD MINE—SPECIAL REPORT.

Sept. 9.—I have to-day inspected Pelyn Wood Mine, as requested, and beg to hand you the following report:—The mine is situated between Lostwithiel and Par, in a district which has formerly made very considerable returns of both copper and tin, more particularly from the mines to the west. Operations have so far been confined to two caunter lodes about 100 fms. apart. One lode has only just been opened upon, is 2 ft. wide, and contains a kindly gossan. The second lode has been driven upon from the base of the hill a distance of 120 fms., and two shafts have been holed to the level. The present end is 45 fms. south of the No. 2 shaft. The lode for the whole distance (120 fms.) runs about 20° east of south, and has varied in width from 2 to 4 ft. It has produced rich stones of grey copper ore (though not in paying quantities), mixed with iron pyrites in a kindly gossan. To the south of the present end there are some east and west lodes, the nearest being probably from 20 to 30 fms. distant, and I would recommend that the level be pushed on to intersect these lodes at once. The ground can be driven for 2*l*. 10s. per fathom, so that two months will suffice to intersect the first lode. The point of intersection would be 20 to 25 fms. from the surface. A shaft should then be sunk at that point for ventilating purposes, and to afford facilities for developing the lode. I think there are fair chances of success here. The killas is of the mineral-bearing class, and other lodes in the neighbouring mines to the west have proved productive. An important feature is the approaching junction of the caunter with the east and west lodes—a point itself sufficiently important to warrant the necessary outlay to prosecute the mine. The ground is so easy for driving, and the working charges so light, that the monthly cost would not for some time exceed 60*l*.—CHAS. THOMAS, Cook's Kitchen Mine, Camborne.

BWLCH UNITED SILVER-LEAD MINES, CARDIGANSHIRE

The board of directors have forwarded to the shareholders the subjoined interesting report of Mr. George Henwood, mining engineer:—According to my usual practice I made a surface survey to ascertain the extent, the geological features, and surrounding properties of the sett. The first I found to be quite a mile east and west on the course of the lodes, and at least ½ mile north and south, thus practically inexhaustible. The strata are Silurian slates, traversed by veins of quartz, numerous small veins or droppers of lead ores, and dykes of rock or channels of ground bearing characteristics somewhat analagous to the elvans of Cornwall. The main lodes present the phenomena of slickensides in a remarkable degree, and thus account for the variations in the width of the veins from a few inches to the vast deposits in connection: similar examples occur in Great Laxey, and many other celebrated mines. The property is literally surrounded by—in fact, it may be deemed the very heart or centre of this series of pre-eminently rich mines, having on the north the Cwm Erfin and East Darren Mines, on the east the Caenant, and on the south and west the Goginan Mines; the main or deep adit of the latter has been driven into your sett, thus setting at rest all doubts as to the identity of the lodes, beside affording you the paramount advantage of draining your mines to the depth of 40 fathoms.

I next proceeded to examine the capabilities and extent of the machinery and appliances. These I may say concisely I found in perfect order, and to consist of a pumping-wheel, 50 feet in diameter, 4-feet breast, and equal in power to a 50-inch cylinder engine, with all the connections fixed and working. A 40-feet drawing wheel, 4 feet breast, equal to a 40-inch engine, and all the attachments fixed and working. A 40 ft. by 4 ft. breast for driving the crusher as well as a 30-in. plunger or ram, with a column of 36 ft. of 24-in. pumps, furnishing a regular and ample supply of water for washing the ores, and transmitting them to the crusher without manual labour; a 20 ft. by 2 ft. 6 in. wheel, which works a new set of jigging machines, dressing gears, buddles, &c.; all this machinery is driven by an unfailing supply of water, for which adequate reservoirs have been provided. I cannot dismiss this subject without remarking on the great economy this extensive series of water appliances create, and on the judicious manner in which the floors and apparatus have been laid out—in fact, the surface expenses have thereby been reduced to the minimum. The buildings comprise capital residences for manager and sub-agent, offices, changing-house, smith and carpenter's shops, stores, stables, and all necessary outbuildings, all in perfect repair. In addition to these, one 112 fms. of 8-in. and 6-in. pitwork, and ladders in Ritchie's engine-shaft, and 92 fms. of pitwork, &c., in the old engine-shaft; these being fixed are in themselves a saving to your company of a very large sum of money and time. On the mine is a goodly supply of timber and iron. I may truly say you need no more machinery for many years to come, there being sufficient for a yield of upwards of 150 tons per month.

Underground Examination: The main lodes traversing the sett are three in number, known as the north, south, and Marvin's lode. The Ritchie engine-shaft has been sunk 112 fms. below the adit, and will enable you by cross-cutting 40 or 50 fms. therefrom to attack the north lode, which stands entire for over 300 fms. in length from the surface. This is a continuation of the Great Goginan lode, from which thousands of tons of lead ore have been raised in the Bwlch and Goginan Mines. I strongly advise this work being prosecuted, as sufficient depth has been attained, and that sinking further be suspended. On the south lode I carefully examined the 50 east, which has passed through a rich course of lead ore over 60 fms. in length. At this point one of the slides mentioned occurs, by which the lode has been impoverished; indications, however, present themselves of passing through this, when undoubtedly another rich deposit will be found. The 30 has been driven on the lode about 80 fms., showing patches of gossan, lead, and blende ores, but not to value; the slide here also disorders the lode for a few fathoms. A cross-cut has been put out south about 10 fms.; this has been suspended until the 50 be further proved. From the 30 a rise has been put up 12 fms. on a good lode of lead ore; in this 12 men are employed raising lead ore, which stuff can, and will, be increased as circumstances require. These stopes average about 15 cwts. of ore per fathom; this will probably be increased as the great shoots of ore known to exist in the old stopes be approached. From this point a level should be driven east over the shoots of ore passed through in the 50. On the north lode a shaft has been sunk to the 92, but no levels have been driven therefrom to prove the ground under the shoots of ore, from which thousands of tons of ore have been raised. Little has been done except stoping near the shaft at the 60 and 70. This shaft will be available for your purpose, and, indeed, is so much work executed, and time and cost saved. The same remarks apply to the south lode, where the shaft has been sunk to the 112 (see working plan).

A cross-cut has been driven in the 15 below the adit to Marvin's lode, and a level driven thereon some 20 fms. west; in prosecuting this a slide was passed in which the lode was found by the former workers to be unproductive. It has opened to a fine lode, varying from a few inches to 4 or 5 ft. in width, having a fine flookan impregnated throughout with lead ore, and containing branches of solid lead from 1 to 3 in. wide; this has been proved for about 11 fms. in length, and is still good in the end. This is a most important discovery; from it considerable supplies of ore may be easily and cheaply raised, as it will afford two good stopes. I strongly recommend a level being driven west. When the stopes shall have been put a few fathoms, in order to prove the ground above the squeeze and slide before mentioned, and also a cross-cut from the adit, as from the alteration in the underlie of the walls as seen in the 15 from its regular angle of inclination to nearly parpendicular, I opine something of great value will be discovered. This belief is corroborated by the old men's surface workings, in which recent examination has detected a fine branch of solid lead, now being wrought by tributers. A level has been driven east for 3 or 4 fms. in the 15 through the slide; here also the lode is improving in size and quality, showing fine gossan spots of lead and blende. This should by all means be prosecuted; I think the result will be as in the east. The ore in the 15 has gone down in the sole of the level, of course, to an unknown depth. The reserves here may be calculated—say

11 fms. by 30 fms. below old men's works, at 1¼ ton per fathom, or equal to 75? tons.

On the mine are upwards of 35 tons of lead and 15 tons of blende ready for the market; a large parcel is broken underground, and being added to constantly. This will be very materially augmented from the new discovery and proposed stopes. Only a little time, capital, and perseverance appear to be required to open up your deeper levels to render the Bwlch United permanently prosperous mines. The produce of the ores in silver is in excess to the generality of Welsh lead, and always commands the highest prices. The mines possess such features as to create surprise that such property should have ever been neglected just on the dawn of prosperity. It, however, presents one of the anomalies sometimes occurring, and never more palpably than in this.—GEORGE HENWOOD, M.E.

WALKHAM UNITED MINES.

Operations at these mines have it appears been quietly but persistently pushed on during the short time that has elapsed since the company took possession. It was recently announced that the necessary repairs at surface and underground were nearly completed, that reserves of ore ground had been laid open, and that returns of tin were soon to be expected. The machinery has now been working for some weeks past, and the stamps have been employed on some good tin-producing stuff raised from the lode in the 20 fm. level, yielding about 28 lbs. to the ton; this in a shallow mine, worked entirely by water-power is good paying work, and this lode shows signs of improving in value as proceeded on. Capt. Phillips, the manager, reports that time has been lost in getting out the first parcel of tin, in consequence of his being wrongly informed as to the underground measurements of the last working, and by reason of greater repairs to surface works than expected being found necessary on restarting. This is a common occurrence on resuming work with old machinery, directly the strain of active work is brought to bear one part after another gives away, and constant stoppages and repairs are necessary. Such has been the case it appears at Walkham United, but the manager writes that this is being overcome, and the stamps, buddles, &c., are now working well. He promises from the tin now being prepared to have a parcel of 2 tons calcined in a fortnight's time, and sent to market a fortnight later, by which time he estimates ground will be laid open from which reasonable returns monthly may be expected. He writes that it will be disadvantageous to the company to work the mines for the present with a view to dividends only, although there is a prospect of this being done for some time, but it must be at the cost of exploratory work. He advocates very properly more vigorous development of these promising young mines. Further reserves should be laid open, the shafts on each side of the river should be sunk, cross-cuts should be put out to intersect the other lodes, and several levels be driven on points already laid open for this purpose. At the same time additional stamps, dressing machinery, &c., should be erected at surface, to admit of treating larger quantities of ore and making increased returns. In this week's report from the mines it will be noted that the whole of the ground is richly impregnated with mineral, and that new copper and tin lodes of great promise are being discovered as the mines are being opened up. The opinion of the manager is confirmed by all local authorities that success at these mines is assured, and that activity in the development is certainly to be recommended.

WHEALS HONY AND TRELAWNY.

The starting of a new 90 in. pumping-engine at these mines on Sept. 17 was availed of for bringing together a large number of the principal shareholders, who made the ceremony more enjoyable by attending a well-served luncheon; amongst those present being Mr. Brockelbank, the Chairman, who presided, and Messrs. G. Palmer, director, H. R. Lewis, M. Loam, William Paynter, jun., John Martyn, E. G. Hamley, W. Derry, Rev. C. Sidney, Capt. Hancock, Mr. Firks, Mr. E. Heard, and others. In connection with the history of the mine it is stated that a rich silver-lead bearing lode, containing about 60 ozs. of silver to the ton of ore, traverses the northern portion of Menheniot parish, having a direction nearly north and south. Accidentally discovered upwards of 30 years since, it has been developed from the south of the well-known Wheal Mary Ann to the north of the Trewetha Mines, a distance of nearly 2 miles, with the exception of that portion of land lying in its course known as Dr. Hony's estate, Trenant, the circumstances connected with which are remarkable. The sales of ore which resulted from the three mines—Mary Ann, Trehane, and Trelawny, southward of Hony's—amounted to above 1,500,000*l.* sterling, the former at the time it ceased working (through engineering difficulties) being 300 fms. deep from the surface and rich for ores in the bottom. Wheal Trelawny was 210 fms. deep, the workings carried close up to the boundary of Hony's estate, and in some instances beyond it, where the temptation of rich stopes of ore proved too strong for the moral rectitude of the miner. Northward of Hony estate and adjoining it on the lode referred to is Trewetha Mine, which produced large quantities of silver-lead, and also paid dividends. It was explained that the sole cause of the property remaining undeveloped was that the late Dr. Hony resisted all overtures by applicants for a lease in order to mine the estate, and although tempting and almost fabulous premiums were offered, nothing could induce him to alter his resolve. The death of Dr. Hony having removed the principle obstacles to the working of the estate, a grant was applied for and obtained, and a company having been formed active operations were commenced. The foundation stone of the large engine-house was laid just before Christmas last, since which a large amount of heavy and costly work has been accomplished under the immediate direction of Captain Hancock, the manager, and Messrs. Loam and Son, the company's engineers, including the erection of a 90-in. pumping-engine, the largest now working in the county, with six boilers, attached, averaging about 11 tons each, the buildings for which are models of substantial masonry. A new steam capstan and winding machinery are also erected, and new 20-in. pump work obtained to ensure the quick and easy draining of the mines; and the whole of the plant throughout is of a character in keeping with the requirements of the company, and qualified to remove every difficulty to the rapid development of its valuable property.

At the luncheon, which was provided on the works during the afternoon, to which the workmen and others sat down, the CHAIRMAN (Mr. Brockelbank), after giving "The Queen," proposed "The Wheal Hony and Trelawny United Silver-Lead Mining Company." He trusted that day, or rather the starting of the engine, would be the occasion for their meeting more frequently. The engine had been successfully started, as they had seen, and it only now remained for him in giving the toast to couple with it the names of two of those who had been so busy and careful in bringing it to that state of perfection which they had noticed with such gratification—the health of Mr. Loam and Capt. Hancock.

Mr. LOAM thanked the Chairman for the very kind way in which he had alluded to him. With reference to the starting of the engine, he might say that such a circumstance was always an important event to Cornishmen. It was a curious fact to him, as an engineer, that without water they could not work engines, and without water in mines there would be no necessity for them. He had been connected with the introduction of that kind of machinery for a considerable time, but during the whole of that period he had never seen an engine more successfully started, or more complete and improved in all its bearings, than the one they had met to see in working order that day. (Cheers. There was but one Wheal Hony and Trelawny in the county, and they would all bear him out when he said that during the whole time of mining depression this mine was always looked upon as the one mine that could really be put to work. (Hear, hear.) Well, he had said that the starting of the engine had been very successful, and he felt proud of it as the engineer, and because it would set at rest the suspicious rumours, and even slanders, that had from time to time been circulated about the neighbourhood, and which had actually reached as far as London, with reference to the impossibility of draining the mine. He felt, however, that after what they had witnessed that they would perceive the fallacy of such speculations, and know that the pumps were in no way unequal to the work. (Cheers.) The engine worked six strokes, and emitted between 700 and 800 gallons of water, in a minute. By-and-bye they would be able to run nine strokes a minute, and pump 900 gallons of water. (Cheers.) These facts, he thought, ought to allay any suspicions and apprehensions that might exist on the matter of drainage. (Hear, hear.) He could not help saying though that the people who spread such reports simply did so from what they thought and desired rather than what they positively believed to be the case. (Cheers.) He congratulated the shareholders and men alike on the future prospects of the mine, which would not only benefit a few but the whole neighbourhood. (Hear, hear.) It would be useless to enlarge further with reference to the utility of the mine. He took that opportunity, however, of remarking that he was exceedingly pleased with the general conduct of the men who had been engaged on the works. In thanking them he made reference to one who had had large experience, and he thanked him for his attention and the manner in which he had performed his work. ("Michael Prior," and cheers.) He again congratulated the men one and all who had assisted in the work As far as the pitwork was concerned, he personally thanked Mr. Martin—(cheers)—who had never failed to do his duty conscientiously and satisfactorily. Let all do honest and energetic work, and then he should have no fear as to the future prospects of the mine. He congratulated the board of directors in having such a gentleman as Mr. Brockelbank as their Chairman, and trusted they would respond to the toast in a loyal and hearty manner.——The toast was drunk with "three-times-three."

The CHAIRMAN, in reply, commented with satisfaction on what the company had already achieved, pointing out that they had failed to pay nobody. He did not believe there was another mining company in the country more fortunate in this respect. (Cheers.) Mr. Loam had fully gone into particulars connected with the mine, and it was, therefore, unnecessary for him to refer to them further. He might add, however, that he had had considerable experience in mining, and he could fearlessly say that this was one of the best properties he had ever known. (Cheers.) No end of mines had sprung up, but there was, after all, only one, "Wheal Hony and Trelawny." It was a splendid property, in which they had all got a vested interest, and it now only remained for him to say that if everything was done rightly and properly by everybody connected with the mine it could not help being prosperous. (Cheers.)

The CHAIRMAN then gave "Captain Hancock," complimenting him on the energy he had invariably displayed, and expressing his entire satisfaction with what had come under his personal observation.

Capt. HANCOCK responded, and in doing so expressed his pleasure at the good staff of men about the mines. As they had heard, there had been all sorts of rumours afloat with regard to reckless expenditure, but nothing, he could assure them, that was calculrted to hurt the mine. There was every prospect of its being well developed.

The Rev. C. SIDNEY proposed "The Workmen," whose conduct, he remarked, had been so exemplary. The Rev. Canon Martin, the rector, was away, but he knew he would be pleased that he (Mr. Sidney) was his representative that day, as he was sure he took considerable interest in the mines. In conclusion, he expressed a hope that if gold could not be found silver and lead would be forthcoming in abundance—in such abundance that when he heard, as he trusted he should hear, of the great prosperity that awaited the mine he should only be sorry he was not a shareholder himself. (Laughter and cheers.)

Mr. MICHAEL PRYOR having acknowledged, Mr. LOAM gave "The Health and Prosperity of Liskeard," coupling with the toast the name of Mr. Firks.

Mr. FIRKS having suitably replied, the proceedings afterwards terminated.

FOREIGN MINING AND METALLURGY.

The general tone of the Belgian coal trade has not varied since our last report. Stocks have been accumulating, but this state of affairs is not expected to last long. Already supplies of domestic qualities of coal are beginning to be laid in for the cold season. The sale of coal has also been resumed at Paris, in anticipation of the approaching winter. There are complaints of the indifferent state of the canals by which coal from the Nord, the Pas-de-Calais, and Belgium is brought to Paris. A number of boats are said to be unnecessarily detained upon the canals; if this is the case the evil is one for which those concerned ought to seek a remedy.

The intelligence available with respect to the Belgian iron trade continues favourable. Orders are numerous and employment is general. Orders arrive upon a considerable scale on foreign account. The Belgian steel works as well as the Belgian construction workshops are extremely pressed with orders. Most of the latter establishments have, indeed, employment already assured to them for the greater part of 1882. The steel works are fairly overdone; they are quite unable to accept fresh orders in cases in which prompt delivery is required, and prices have been very firm in consequence—so firm that some orders have found their way into Germany. The Belgian markets for iron and pig have shown considerable firmness; there are occasionally some fluctuations in prices, but upon the whole quotations appear to be firmly established. Iron has made 5*l.* per ton upon the Belgian markets, with the usual scale of 8s. per ton per number. Plates have been in good demand at 7*l.* per ton; attempts have been made to carry this quotation to 7*l.* 4s. per ton. but they have not been very successful. An adjudication of 4000 tons of Vignolles steel rails with accessories is to take place on Sept. 28. A contract has been obtained by an Austrian firm for 5000 tons of steel rails for the Lemberg and Czernowitz Railway.

The St. Dizier (France) iron market has not lost the good tone by which it has been distinguished for some time past. The favourable intelligence received from abroad has a tendency to maintain the firmness of the market. There is a sustained current of affairs, and some enquiries have been made by districts which only lay in casual supplies in the Champagne group; this is regarded as an indication that a firm tone characterises the other French metallurgical groups. The quotations generally current for iron are 7*l.* 12s. to 7*l.* 16s. per ton for coke-made, and 8*l.* 8s. to 8*l.* 12s. per ton for mixed qualities. The demand for sheets and machine iron continues good, and it is the same with tin-plates. A new undertaking has been established at Paris under the title of the Franco-Belgian Railway Plant Company. The concern will virtually take over the undertaking of the Belgian Railway Plant Company, together with its staff. The share capital has been fixed at 320,000*l.*, represented by 16,000 shares. This share capital has been fully subscribed. M. Charles Evrard will continue to act as managing director. The construction workshops of Austria are well employed, especially on French orders. Some good steel rail contracts have also been secured by Austrian firms.

Registration of New Companies.

The following joint s have been duly registered:—

THE DOMINION GOLD MINING ASSOCIATION (Limited).—Capital, 100,000*l.*, in shares of 10*l.* To purchase or otherwise acquire and work mines, minerals, and mining rights in the Dominion of Canada or elsewhere, and to acquire any lands, estates, and properties. To crush, wash, smelt, reduce and amalgamate the ore, selling and disposing of the produce, and generally to carry on all operations connected with a gold-mining company. The subscribers are—T. S. Tancred, 2, Westminster Chambers, baronet, 300; G. B. C. Leverson, 50, Gracechurch-street, merchant, 500; J. Wernher, 29, Holborn Viaduct, merchant, 100; H. A. Herbert, Muckross Abbey, esquire, 100; C. A. Waring, 34, Clement's-lane, C.E., 100; J. L. Ridpath, 33, George's-street, merchant, 100; T. A. Ridpath, 33, George's-street, merchant, 100. The first directors are—Sir T. S. Tancred, Messrs. G. B. C. Leverson, H. A. Herbert, and J. Wernher, the qualification being fixed at 100 shares. The number of the directors must not be less than 3 or exceed 5.

AILSA STEAMSHIP COMPANY (Limited).—Capital 36,000*l.*, in shares of 1*l.* The purchasing and owning said steamer and carrying on a shipowner's business in all branches. The subscribers (who take one share each) are—W. P. Fernwood, Liverpool; D. Campbell, Liverpool; E. S. Hall, Liverpool; N. T. Fleming, Liverpool: J. Bower, Liverpool; E. Codrington, Liverpool; G. Nicholson, Liverpool.

ALPS STEAMSHIP COMPANY (Limited).—Capital 37,500*l.*, in shares of 1*l.* Objects same and subscribers ditto as the foregoing company.

ALVO STEAMSHIP COMPANY (Limited). — Capital 35,500*l.*, in shares of 1*l.* Objects same and subscribers ditto as the foregoing company.

ARRAN STEAMSHIP COMPANY (Limited).—Capital 9500*l.*, in shares of 1*l.* Objects same and subscribers ditto as the foregoing company.

CLARIBEL STEAMSHIP COMPANY (Limited).—Capital 28,500*l.*, in shares of 1*l.* Objects same and subscribers ditto as the foregoing company.

ETNA STEAMSHIP COMPANY (Limited). — Capital 29,500*l.*, in shares of 1*l.* Objects same and subscribers ditto as the foregoing company.

THE ROTHERHAM ALUM AND CHEMICAL COMPANY (Limited).—Capital 32,000*l.*, in shares of 20*l.* To purchase, take over, and carry on an established business at Rotherham, Yorkshire. The subscribers are W. H. Mycock, Rotherham, 10; T. Belcher, Rotherham, 5; A. Bibbs, Rotherham, 5: C. Searle, Rotherham, 5; C. Wray, Barnsley, 50; T. A. Smith, Bow, 50; W. B. Hammock, Meynell-road, 25.

THE ABERDARE COFFEE TAVERNS COMPANY (Limited).—Capital 5000*l.*, in shares of 1*l.* To establish and conduct refreshment houses in that town and neighbourhood. The subscribers are J. W. Jones, Aberdare, 10; D. Rees . Aberdare, 20; T. B. Powell, Aberdare, 10; W. Thomas, Aberdare, 10; J. Hughes, Aberdare, 10; D. Richards, Aberdare, 5; A. N. James, Aberdare, 5.

THE BRENTFORD, EALING, KEW, RICHMOND, AND SUBURBAN OMNIBUS COMPANY (Limited).—Capital 8000*l.*, in shares of 1*l.* To carry on the businesses of omnibus and stage carriage proprietors, &c. The subscribers are—E. M. Nelson, Ealing, 50; K. R. Montgomery, Brentford, 50; M. Ballard, Brentford, 50; H. T. Hewbings, Ealing, 50; H. J. West, Twickenham, 50; W. C. Daniell, Brentford, 10; J. H. Bell, Strawberry Hill, 5.

THE NATIONAL EXCURSION STEAMSHIP, COLLIERY, AND SALVAGE COMPANY (Limited).—Capital 250,000*l.*, in shares of 1*l.* To carry on generally the business of shipowners, colliery proprietors, and marine salvors in all branches. The subscribers (who take one share each) are—R. N. Collier, Upper Tooting; L. A. Koppel, Cowslip-road; J. Franor, 249, Kingsland-road; W. E. Follit, Clapham; T. J. Ford, 60, Finsbury-pavement; F. E. Mardon, 3 and 4, Great Winchester-street; W. Rotherham, Hampstead.

RIVER GAMBIA TRADING COMPANY (Limited).—Capital 150,000*l.*, in shares of 1*l.* To purchase from W. Goddard certain interests in lands, wharves, warehouses, and stores at Bathurst, also his business, and to continue same. The subscribers (who take one share each) are—J. Skinner, Kensington-crescent; P. J. Jäcker, Clapham; H. B. Webb, St. Michael's House; W. McDonell, Camberwell; R. Carling, Peckham; R. E. Cole, Sydenham; F. W. Phillips, 103, Fenchurch-street.

BWLCH CREOLAN SILVER-LEAD MINE (Limited). — Capital 72,000*l.*, in shares of 1*l.* Purchasing the lease of certain mines situate in Montgomeryshire, North Wales, held from the Earl of Powis, with all the stock, materials, and plant appertaining thereto; and for that purpose to adopt and carry into effect an agreement made between C. Meakin, J. Walton, and E. Worrall, of the one part, and H. Bannister on behalf of the company. Carrying on mining operations of all kinds, getting, smelting, reducing, and selling minerals, &c.; the construction and maintenance of railways, roads, wharves, watercourses, &c. The subscribers (who take one share each) are—J. Walton, Birmingham, licensed victualler; J. Beddre, Handsworth, colliery proprietor; E. Morrall, Bridgeworth, brewer; H. Bannister, Derby, cooper; E. E. Hall, West Bromwich, draper; T. C. Walter, Birmingham, traveller; E. A. Copeland, Birmingham, gentleman.

THE AMERICAN EXCHANGE OF PARIS (Limited). — Capital 100,000*l.*, in shares of 2*l.* To purchase and continue an established business. The subscribers (who take ten shares each) are—H. F. Gilling, 449, Strand; J. H. Hobson, Paris; C. B. Waite, New York; H. S. Roberts, 65, Talbot-road; W. H. Sydenham, 65, Talbot-road; H. Tozer, Catford; S. R. Harbert, Walworth; and T. Bewley, 18, York-road.

THE CEIRIOG GRANITE COMPANY (Limited).—Capital 30,000*l.*, in shares of 10*l.* The business of raising, working, and utilising and selling granite, slates, limestone, freestone, china stone, and other workable stone, fullers earth, clay, sand, ores, minerals, fossil deposits, and similar substances, &c. The subscribers (who take 50 shares each) are—R. M. Biddulph, Denbigh; J. C. Edwards, Ruabon; J. P. Smith, Shrewsbury; J. Morris, Oswestry; W. Eddy, Denbigh; J. D. Lloyd, Chirk; H. Dennis, Ruabon.

LEADVILLE MINES.—Some handsome specimens of quartz carrying free gold have, it appears, been obtained from the mines of the American Mining Company, near Rod Cliff. The company some time ago commenced to erect a stamp mill, which is now nearly completed. The mill is a Huntington oscilating stamp mill of about 10 stamps capacity, and was built by Frazier and Chalmers, of Chicago. In addition to the crushing machinery, improved devices will be added to save a larger percentage of the gold than is usual with only stamps and plate. A gentleman representing English capitalists has recently visited the mines, and through the courtesy of Mr. D. Jackson, the secretary, and Col. H. A. Plimpton, the superintendent at the mines, afforded every opportunity to examine them. After a careful inspection, and collecting quite a quantity of ore from the Rose lode for shipment to his company in Europe, he expressed his astonishment at the amount of ore in sight, and stated that it was the most wonderful deposit of gold bearing ore he had ever seen. The company have been systematically developing the property for the past year, and now have 1000 tons of ore on their dump, and are anxiously awaiting the completion of the mill and tramway, when they can begin to realise from the product of the mine.

NEVADA MINES.—The Eureka district appears to be satisfactorily developing—the Bowman Mine is now being encrgetically pushed forward. It is situated on the eastern side of Adams' Hill, and was located in 1875 by Bowman. It passed from him to A. E. Titus, and was subsequently sold by the latter to the Bowman Company. Last spring the company was reorganised, and its name changed to the Bowman Silver Mining Company, and is operated under the laws of Maine. Its location is a promising one, the south end of the claim being only 200 ft. from the north line of the famous Richmond Mine. The energy thus far displayed by Superintendent Levy and the new management leads us to the belief that the Bowman will at no distant date take its rank among our foremost mines. At present a force of 13 men is being worked night and day. Ore has already been shipped from from this mine, and another shipment will soon follow. That encountered thus far assays from $40 to $300 per ton, and runs 90 per cent. in gold. Superintendent Levy (Aug. 27) writes—During the past week we have shipped 12 tons of ore to the Eureka Consolidated furnaces. The ore worked $105·35 per ton, of which there was $77·86 in gold and $27·49 in silver. This I consider very fine ore, and expect to make another shipment before the 5th proximo. After the connection between the first and second levels shall have been made we shall be able to extract gold more rapidly. The mine is being worked in shape, looking to future development. The various ore stopes are looking fine, and promising to yield a large quantity of ore.

REMARKABLY RICH QUARTZ—ONE HUNDRED AND TWENTY THOUSAND DOLLAR ROCK FROM NEVADA COUNTY.—Mention was made a few days ago of the reduction of a valuable piece of gold quartz at the metallurgical works of Prof. Thomas Price. Since then the remainder of the consignment, excepting a chunk weighing 209 lbs., has been reduced, and the quantity of gold it contained definitely determined. The total shipment weighed 1962 lbs., and the total yield $116,537·38. This is equivalent to $120,000 in gold per ton. In other words, in weight one-quarter of the material was gold; in bulk one-twenty-eight, as the specific gravity of the rock in which gold is found is seven times less than that of gold. It is considered to be the richest specimen of gold quartz ever obtained from any mine. The chunk weighing 209 lbs. is now on exhibition at the office of H. H. Noble, stockbroker, 435, Californian-street. It is estimated to contain $20,468. This chunk is at the rate of $200,000 a ton. This remarkably rich quartz has been obtained from the Rainbow Mine, near Moore's Flat, Nevada county, at a depth of 200 ft. from the surface of the ledge. The ledge itself underlies a deposit of auriferous gravel. The mine has been worked for many years with varying degrees of success. The quartz obtained is not, of course, all (or anywhere near) like the rich specimens which have yielded nearly $120,000. In the language of the professional miner this rich strike was a "pocket," but one such pocket would make a mine which most miners would be willing to risk a good deal to obtain. The rock of the Rainbow is said to yield ordinarily about $60 per ton; assays giving $114 per ton have been obtained. But there was a time in its recent history when the question of abandonment was seriously considered. The new explorations finally determined upon resulted in the late development. According to the miner's theory, "there's more where that came from," and yet it has frequently been the experience in such cases that the search for more has been unsuccessful. Whether the Rainbow Mine contains more rich pockets or not remains for future exploitation to determine. The presence of such a body of rich ore immediately underlying the auriferous gravel beds of Nevada county clearly indicates the source whence those gravel beds obtained the precious metal they carry.—*San Francisco Bulletin, Aug.* 31.

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PARIS, BRONZE MEDAL, 1867. ORDER OF THE CROWN OF PRUSSIA. FALMOUTH, SILVER MEDAL, 1867

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having xhibited the McKean Drill alone as the MODEL BORING MACHINE or the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE McKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24·90, 27·60, 24·80, 26·10 28·30, 27·10, 28·40, 28·70 metres. Total advance of south heading during January was **121·30 metres, or 133 yards.**

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL: and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them value unapproached by any other system of Boring Machine.

THE McKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The McKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts—have no weak parts—act without SHOCK upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

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Prize Medals, 1851, 1855, 1878, for

MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

THE UNDERSIGNED, having secured the Grants of several VALUABLE MINERAL PROPERTIES (TIN AND COPPER), in the St. Blazey District, in the vicinity of Fowey Consols, &c., is DESIROUS of OBTAINING the CO-OPERATION of CAPITALISTS for their EXPLORATION. There is little or no risk involved in the undertakings, and the capital required in each case is very limited. R. SYMONS.

11, Parade, Truro, 3rd February, 1881.

MAP OF CALLINGTON, CALSTOCK, AND TAVISTOCK MINING DISTRICTS.

Proposed to be published by subscription, a MAP of the ABOVE DISTRICTS, showing the names and boundaries of all existing setts, lodes, cross-courses, and every other matter which such a map should contain. Persons disposed to patronise the publication—at One Guinea per copy—will please send their names as early as possible to me. R. SYMONS, Mineral Surveyor, Truro.

February 3rd 1881.

TO PARENTS AND GUARDIANS.

AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and gain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

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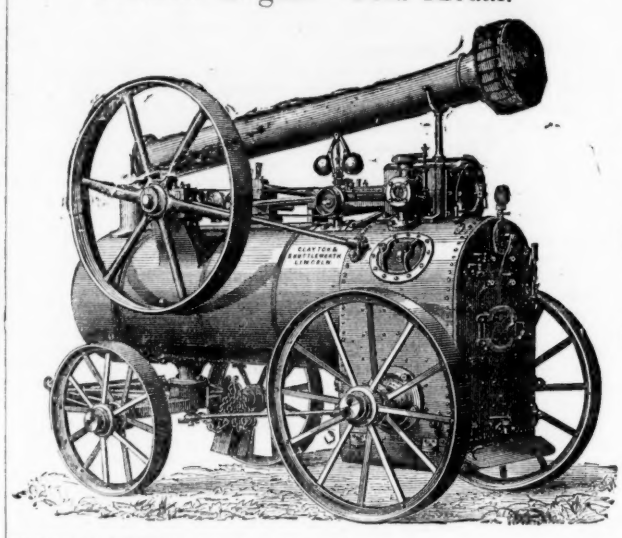
1880-81.—MELBOURNE (AUSTRALIA) EXHIBITION.

Portable Engine—Gold Medal. Thrashing Machine—Gold Medal.



☞ *The Royal Agricultural Society of England have awarded Every First Prize to CLAYTON and SHUTTLEWORTH, for Portable and other Steam Engines since* 1863, *and Prizes at every Meeting at which they have competed since* 1849.

GOLD MEDALS, AND OTHER PRIZES,

Have been awarded to CLAYTON AND SHUTTLEWORTH at the various International Exhibitions of all Nations, including

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STEAM ENGINES, Portable and Fixed

(For Coals, Wood, Straw, and every description of Fuel.)

THRASHING MACHINES.
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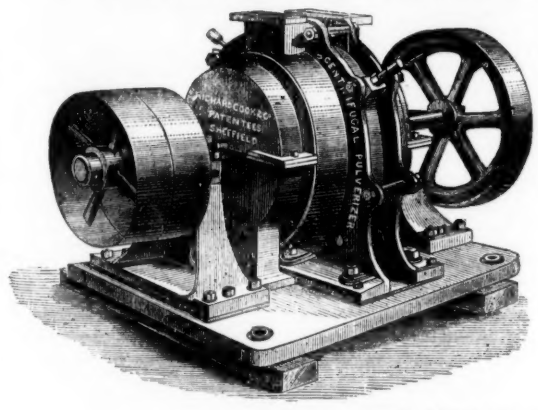

(Two tons per hour with 5 horse-power actual,)

For reducing to an impalpable powder, or to any requisite degree of fineness, all materials capable of being thus treated. CEMENT, CHEMICALS, GRAIN, COAL, COLOURS, PHOSPHATES, LIME, COPPER, TIN, ZINC, and other Ores with rapidity, completeness, and perfect uniformity.

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This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two or more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of the casing, and by centrifugal force crush and pulverise the article under treatment.

The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity

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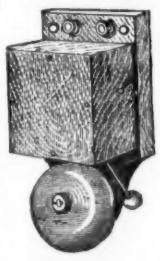
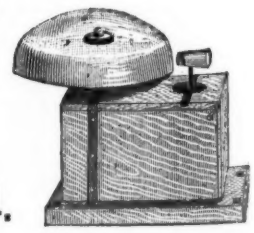


AND OTHER TELEGRAPHIC APPARATUS FOR MINES, &c.



Prize Medal - - - London, 1862.
First Prize - - - Sydney, 1879.
Prize Medal - - - Melbourne, 1881.

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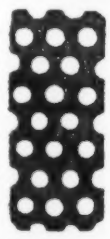

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NO OTHER ADDRESS.

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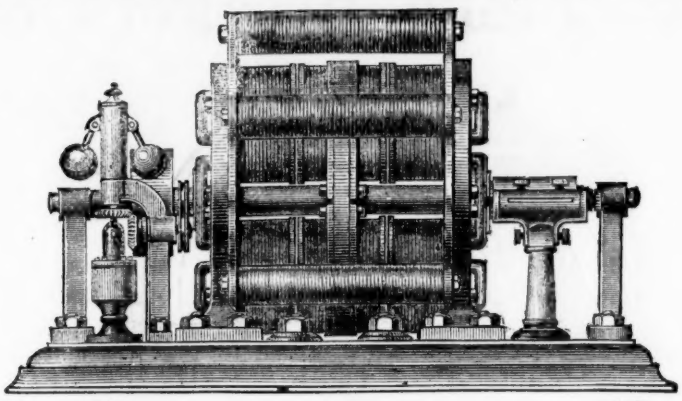


NO AGENTS.

ALL APPLICATIONS SHOULD STATE THE PURPOSE FOR WHICH THE MACHINE IS REQUIRED.

The "Elmore" Patent Dynamo-Electric Machine,

FOR DEPOSITING

NICKEL, SILVER, BRASS, BRONZE, COPPER, ETC., AND FOR ELECTROTYPING.

REPEATED COMPARATIVE TRIALS have proved that this is the **MOST POWERFUL MACHINE IN THE MARKET**, that it **NEVER REVERSES CURRENT**, and that it is very easily worked without special knowledge.

COMPLETE OUTFITS OR MATERIALS FOR NICKEL-PLATING, SILVER-PLATING, ELECTROTYPING, TINNING, BRONZING, &c.

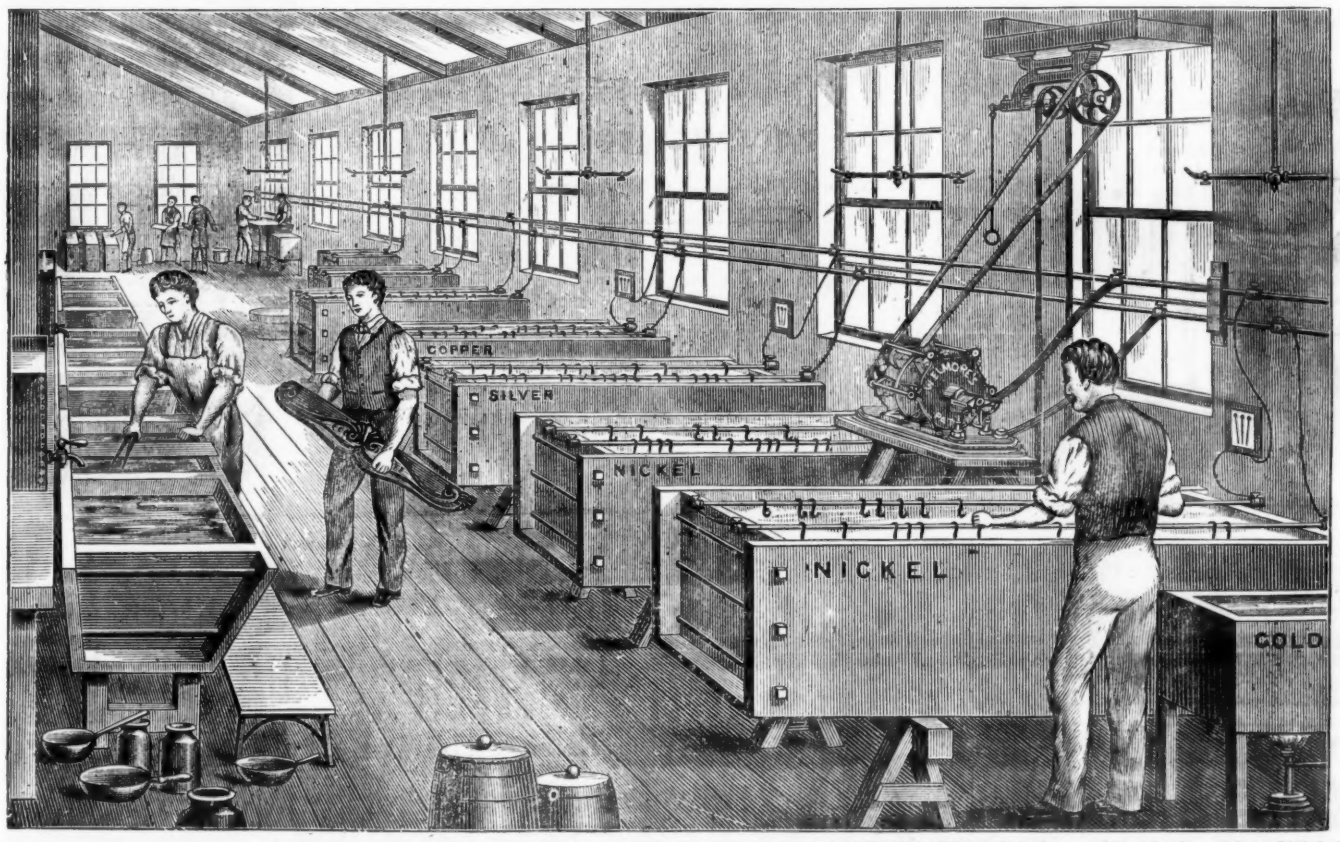
TO TIN-PLATE MANUFACTURERS AND GALVANIZERS.

The attention of TIN-PLATE MANUFACTURERS AND GALVANIZERS is respectfully directed to the NEW PROCESSES of manufacturing Tin-Plates by depositing the Metal by the current of an "ELMORE'S PATENT" DYNAMO-ELECTRIC MACHINE through aqueous solutions in contradistinction to the old processes of dipping in molten metal.

THE ELECTRO DEPOSITED METAL IS PERFECTLY REGULINE IN character, and the electric current may be so EASILY CONTROLLED as to coat with a MERE FILM OF METAL, OR A DEPOSIT OF ANY DESIRED THICKNESS. The great economy in the cost of plant and cost of production will be immediately self-evident. As nearly the whole of the existing plant can be used in the new process, the cost of altering the system will be comparatively trifling.

DYNAMO-ELECTRIC MACHINES

SPECIALLY CONSTRUCTED FOR DEPOSITING ANY METAL IN ANY QUANTITY.



The above represents an Electro-plating Works, in which an "ELMORE" PATENT DYNAMO-ELECTRIC MACHINE is being used for the deposition of Nickel, Silver, Copper, Bronze, Brass, Gold, Tin, Zinc, &c., from their Solutions.

From "INDUSTRY."

"By means of the dynamo-electric machine of Mr. William Elmore, the perfection of nickel-plating is obtained. Dynamo-electricity—that is, electricity produced by motive power—presents advantages which cannot be claimed by any galvanic battery known. Not only is the current produced at a far less cost, but it can be so regulated or controlled that the smallest article can be separately coated by a dynamo-electric machine, capable (in its full application) of depositing from 25 lbs. to 30 lbs. of silver per hour. It is a remarkable fact, moreover, that metals can be deposited from their solutions by dynamo-electricity in less than one-third of the time occupied by the ordinary battery in producing the same result. The quality of the deposit, in regard to its smoothness and reguline character, is greatly in favour of dynamo-electricity.

"Having had considerable experience in dynamo-electric machines, Mr. W. Elmore has been careful to note the defects and irregularities which some of the less skilfully constructed machines have presented, and thus he has been enabled to produce a really practical and effective machine, of great power, which may be thoroughly depended upon as being capable of giving the most satisfactory results for all purposes of electro-deposition, including gilding, silvering, brassing, nickeling, and electrotyping.

"The advantages of dynamo-electricity in the important art of electrotyping are beyond estimation. When it is known that a fine, clear, deposit (or 'shell') of copper, 300 ft. square feet, can be obtained by a dynamo-machine in less than three hours, without 'pin-holes,' and other defects common to battery deposits, it will be at once seen that the ordinary battery is effectually and unmistakably superseded.

"One of the most useful purposes to which dynamo-electricity can be applied is the production of chemically pure nickel solutions, and salts of nickel, for the electro-deposition of the metal. The vast amount of electricity generated in a dynamo-machine enables one to dissolve nickel and other metals in their own solvents far more economically, and in greater purity than by the ordinary method of treating metals. Electrical power obtained by the ordinary galvanic battery would be far too expensive for this purpose. The solutions formed by the aid of dynamo-electricity are not only purely and economically made; but they can be produced in far less time, and with comparatively little trouble and attention. To Mr. Elmore is due the honour of having introduced into this country the process of making pure nickel solutions and salts by means of dynamo-electricity. The boon he has thus conferred upon a large industrial class we need not dilate upon."

From "THE IRONMONGER."

"A still further improvement in the deposition of metals has been recently obtained by the introduction of the dynamo-electric machine of Mr. Wm. Elmore, which is in reality electricity produced by motive power. By this means the current is obtained at a much less cost, and I have seen it regulated to such a nicety that the smallest article could be separately coated in a full-sized vat. The deposit is also effected in about one-third of the time taken by a galvanic battery, and for smoothness and regularity of surface is greatly in favour of the dynamo process, which may be known from the fact that all Mr. Elmore's competitors, both in London and elsewhere, are fast adopting his machine in preference to the old process. He has, in addition, supplied it to many large firms throughout the country for electrotyping purposes, and the reports received from them are gratifying to the inventor. Mr. Elmore is also the author of an interesting little work on the subject, which may be read with interest by those who contemplate entering into what is fast becoming an important industry."

WILLIAM ELMORE, 91, BLACKFRIARS ROAD, LONDON, S.E.

DYNAMO-ELECTRIC MACHINES FOR ELECTRIC LIGHTING.

DYNAMO-ELECTRIC MACHINES SPECIALLY CONSTRUCTED FOR DECOMPOSITION.

DYNAMO-ELECTRIC MACHINES FOR DEPOSITING ANY METAL IN ANY QUANTITY.

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OVER **2750** IN USE.

NEW PATENT WROUGHT-IRON CONNECTING ROD.

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NEW PATENT STEEL TOGGLE BEARINGS.

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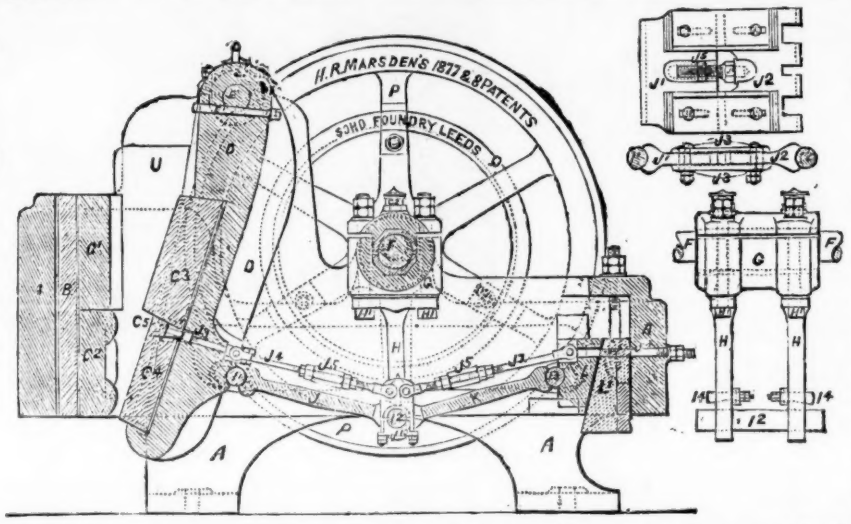

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We are, yours faithfully,
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St. John del Rey Mining Company (Limited).

A SAVING OF FIFTY-FIVE HANDS BY THE USE OF ONE MEDIUM-SIZED MACHINE.

BLAKE'S STONE BREAKER.—Statement made by the Managing Director of the St. John del Rey Mining Company, Mr. John Hockin, with regard to six months' practical working of Blake's Stone Breaker, affording facility for judging of the relative economy of machine and hand labour in this kind of work, and also of the cost of getting the Stone Breaker to work in difficult places. The price paid to Mr. Marsden for the machine referred to by Mr. Hockin was £180, and adding to this the cost of engine carriage, and fixing, the aggregate cost to the company of the Breaker in working order was £500. By this outlay the company is enabled to dispense with the labour of 55 people, the value of which is £600 per annum. The cost of working the machine could not be more than the wages of about five men (the machine requires but one man to feed it, so that the rest would be for engineer, fuel, oil, &c.), and allowing for interest on outlay and for renewal when necessary, the saving must be enormous.—*Mining Journal.*

ALL BEARINGS are renewable, and made of H.R.M.'s Patent Compound ANTIFRICTION METAL.

CATALOGUES, TESTIMONIALS, &c.

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Of which he has made over **8000.**

ALSO, HIS

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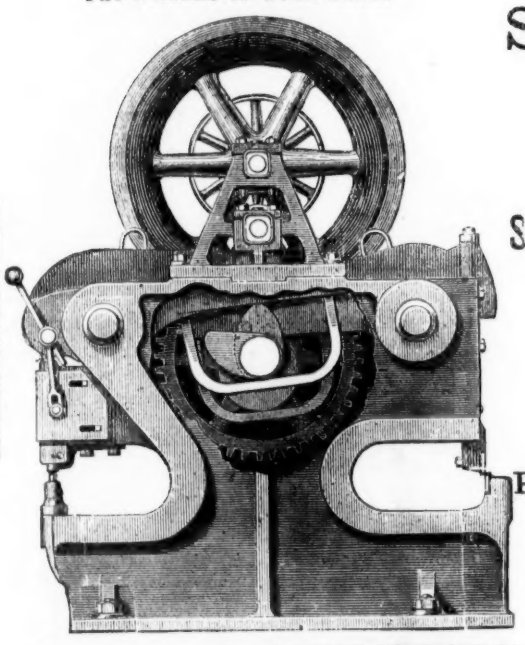
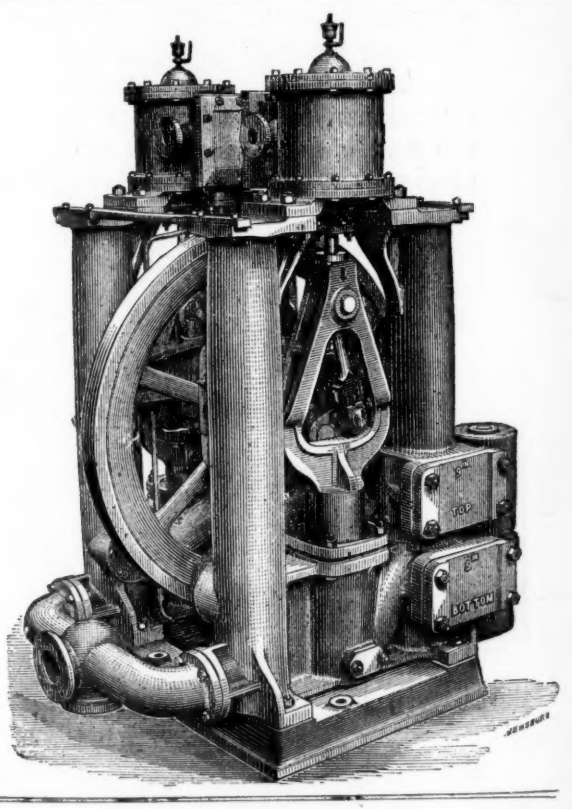
FLY-WHEELS ON BOTH SIDES.



DISENGAGING APPARATUS



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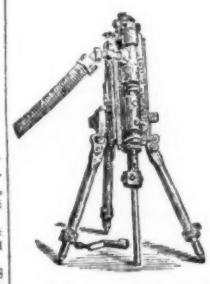

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